Western Regional Corridor Study 1986

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Prepared By
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December 1986

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Summary

Beginning in the mid-1970s, conservation organizations, federal agencies, and the utility industry recognized the need to establish a regional corridor system in the western United States. This system would accommodate growth in energy transmission facilities in a planned way, minimizing adverse environmental impacts while allowing logical and efficient development of energy transmission systems. Increases in population, growth and relocation of industry, constraints on location of new energy production sites, and other related factors result in an absolute need for development of a planned, interconnected, regional corridor system.

A high percentage of land in the western United States is under federal ownership. Under this federal ownership, there are many land use limitations imposed through environmental requirements and special area designations. When agency land use limitations on federal lands are coupled with the many geographic and topographic constraints to energy transmission facilities, the result can prevent the feasible linking of energy production areas and consumption centers. Therefore, it is imperative that the major federal land management agencies (Bureau of Land Management and Forest Service) take a lead responsibility in corridor planning.

To protect our economy and standard of living, and to allow for inevitable growth, a regional corridor network must be established. Federal agencies, in cooperation with industry and interest groups, should assume a major responsibility for developing a corridor system in their land use plans. The Western Utility Group (WUG), beginning with its "Western Regional Corridor Study—1980," and continuing through local efforts by WUG members, has actively sought this end. With release of this document, the "Western Regional Corridor Study—1986," WUG continues its efforts by highlighting the status of corridor planning and presenting revised and reconciled state-by-state maps showing industry identified corridor needs.

There are bright spots in corridor planning in local areas. More numerous, unfortunately, are agency planning jurisdictions which have not, as yet, recognized the need for corridor designation in land use planning (see the map on the following page). One goal of this document is to identify the absence of a regional approach to energy corridor planning by federal agencies.

With the presentation of this document, the Western Utility Group urgently requests that the Bureau of Land Management, Forest Service, and other agencies where appropriate, adopt policies *requiring* development of a viable regional corridor system. Failure to do so, in the opinion of the Western Utility Group, is to ignore a critical land use issue in the federal land management planning process. The Western Utility Group believes that the corridor network presented in this document, if adopted on a regional basis, would satisfy this need with minimum agency study and expense. We sincerely urge that this be done.

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Agency Corridor Designation Status

The following map of the eleven western states depicts the current status of corridor designation in Bureau of Land Management (BLM) and Forest Service (USFS) land use planning. The intent in presenting this map is to show the level of consistency (or inconsistency) existing between land use planning jurisdictions of the two agencies. In assembling the data for this map, it became apparent that the level of inconsistency between planning jurisdictions was even greater than anticipated.

For graphic clarity, three broad categories of designation were established, and although the diversity of agency approaches to corridor planning are many, these three categories have been retained as follows:

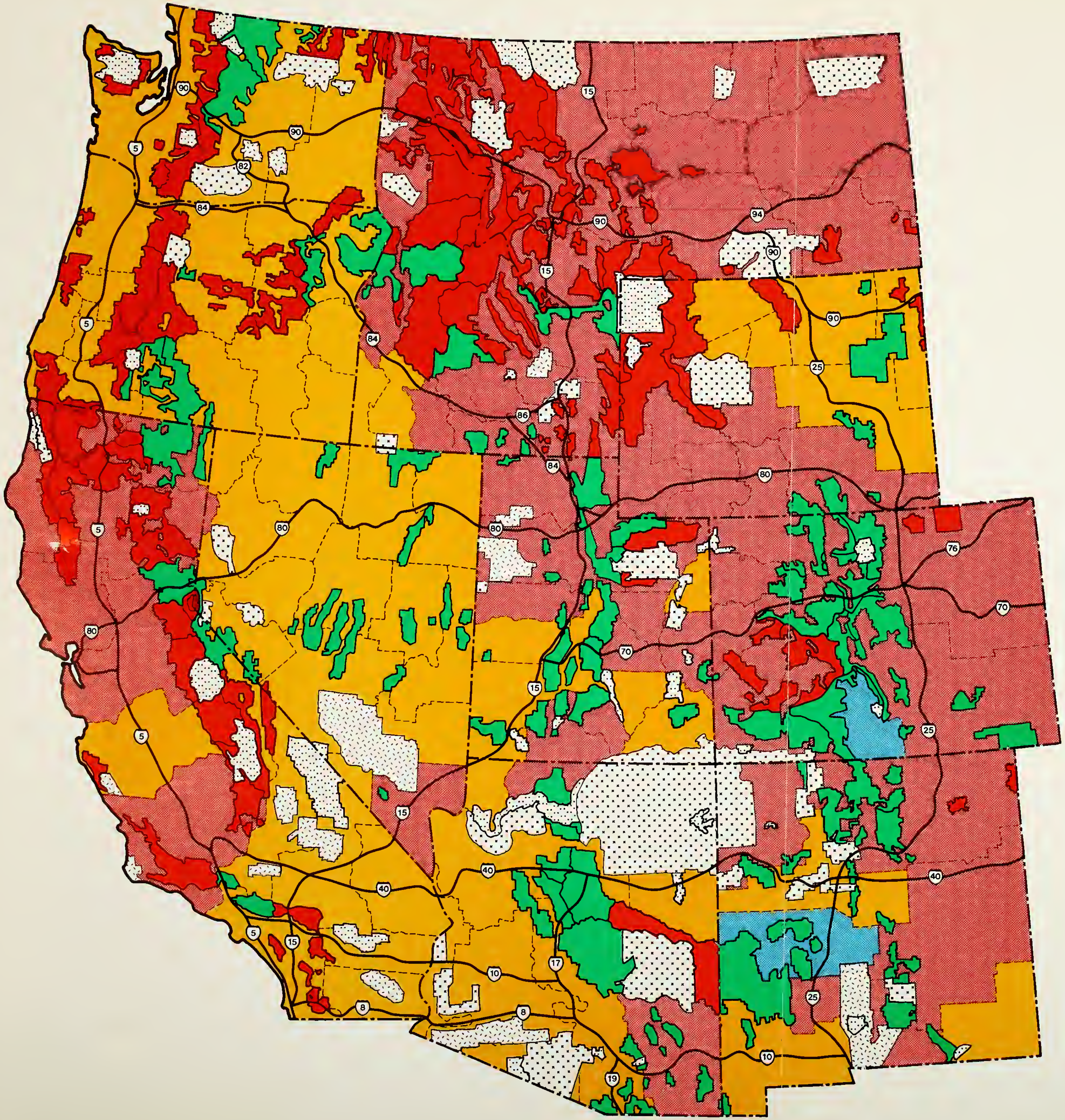
- Designates Corridors
- Does Not Designate Corridors
- No Decision On Corridors

Despite the difficulty of interpreting the individual planning status for each field office jurisdiction, every attempt has been made to place each jurisdiction's planning into the category most accurately representing it.

Because of the necessary broadness of the three categories, some individual plans could legitimately be placed in either of two plan status categories. For example, if a field office land use plan recognizes designated corridors in its inventory, field data, and preferred alternative, but the final record of decision has not yet been issued, that plan could be classed as either "no decision on corridors" or "designates corridors." In all cases, data has been interpreted in the most positive light; i.e., in the above example, the hypothetical plan would be classed as "designates corridors."

In assigning each individual plan to one of only three categories, every effort has been made to do so with accuracy and consistency. The original intent of this map has been retained, which is to present a graphic representation of the degree which a coordinated and integrated system of regional corridors has been recognized and designated in Bureau of Land Management and Forest Service land use plans. Considering the information regarding corridors which has been available for several years and from various entities, the patchwork inconsistency of agency designation of regional, interstate corridors is both startling and unfortunate.

Certain other explanatory notes on this map are in order. Please bear in mind that the only purpose of the regional map is to show the level of consistency of planning among Bureau of Land Management and Forest Service jurisdictions. The readers should remain aware that many large areas, such as some Indian reservations and military areas, are not multiple-use areas and appear as "blank" areas on the map. Also, in much of northern California, western Oregon, and Washington, the vast majority of lands are nonfederal; some areas of all states are in this situation. Although these areas generally fall within the *geographic* jurisdiction of an agency, the agency may actually control a very small portion of the land. Also, jurisdictional boundaries are generally accurate, inasmuch as scale permits. Special jurisdictions and areas less than 100,000 acres may not be shown due to scale. Appendix A provides a complete Corridor Designation Inventory for USFS and BLM administrative units in the eleven western states.



Agency Corridor Designation Status *

U.S. Bureau of Land Management and U.S. Forest Service

Legend

BLM USFS

Designates Corridors

Does Not Designate Corridors

No Decision on Corridors

U.S. Bureau of Land Management Resource Area Boundaries

U.S. Forest Service National Forest Boundaries

U.S. National Parks and Monuments (over 100,000 acres)

Indian Reservation Lands (over 100,000 acres)

U.S. DOE and DOD Lands (over 100,000 acres)

Note: All unpatterned areas outside National Forest boundaries are shown with BLM designations

***Corridor designation terminology varies between jurisdictions and is open to interpretation.**

North

0 50 100 200 400 miles

December 1986

Prepared for the Western Utility Group
by Michael Clayton & Associates

Western Regional Corridor Study 1986

Introduction

In May, 1980, the Western Utility Group, in coordination with 100 federal linear right of way holders, published the Western Regional Corridor Study. Its purpose was to draw the attention of federal land managers, then in the midst of wilderness studies and land planning efforts, to the critical need to plan for future linear uses by designating corridors in federal land use plans. The study demonstrated the need to balance competing uses, develop public policy allowing alternatives for uses precluded or foreclosed by statutory constraint, review policy through public disclosure and commentary, and improve land management policy through the land planning process. Corridor users, whether electric lines or gas, coal slurry, or oil pipelines, are vulnerable to policy differences among planning units and agencies. The most advantageous planning perspective, the 1980 study reported, was a regional one.

For the past six years, the Western Utility Group has promoted regional corridors as a land use that must be considered in federal land use plans. Policies, guidelines, and standards for corridor designation must be consistent on a *regional* basis to successfully implement the Federal Land Policy and Management Act (FLPMA) mandate of encouraging corridors by discouraging the proliferation of separate rights of way. In reviewing the situation, the Western Utility Group believes it is necessary to provide a status report reviewing western corridor planning efforts, to refine and restate the corridor concept, and to update the 1980 corridor network data.

The Corridor Concept and Federal Land Use Planning

The Corridor Concept

Although there are many variations, a good consensus definition of a corridor is a linear strip of land without definite width but limited by technological, environmental, and topographical factors, and containing one or more utility or transportation facilities. A corridor is a land use designation, identified for the purpose of establishing policy direction as to the preferred location of compatible linear facilities and compatible and conflicting land uses. It does not imply entitlement of use. Appropriate environmental review and regulatory proceedings must precede occupancy on a project-specific basis.

The Need for Corridor Planning

Most land use planners agree that discouraging the proliferation of separate rights of way reduces the cumulative environmental impact of linear facilities. Conceptually, it is easy to envision that right of way consolidation produces less contact area between differing or competing uses. Theoretically, this should lessen adverse impacts and conserve resources by confining impacts to specific areas where they can be more efficiently mitigated and managed. This is the land manager's perspective.

From the utility perspective, areas suitable for transmission lines are a finite resource, being limited by laws, policies, and regulations that have been established to protect or conserve valued resources such as national parks and monuments, wilderness areas, endangered species, cultural resources, wild and scenic rivers, and many more. Protected resource areas along with lands dedicated to an exclusive use, such as military bases, combine to constrain routing options. Adding to these legislatively constructed constraints are the federal land management prescriptions further limiting utility opportunities for good routing alternatives. Designation of corridors is needed to prevent "close-out" of suitable routes.

There is justification for a properly planned system of utility and transportation corridors which serves both perspectives. A system of planned corridors provides programmatic review and policy definition, assisting in the environmental and approval process. The dominant expense, in terms of both time and money, in a transmission project review and approval process is the development, study, and analysis of project routing alternatives.

Corridors, adopted as part of land use plans, eliminate (or lessen) the need to consider routing alternatives, assuming that the project proponent agrees to locate within a designated corridor. System alternatives (i.e. alternatives to transmission line construction) may still be required, however, routing alternatives need not be considered further. Referencing the programmatic routing considerations discussed in the land use plan environmental impact statement reduces redundant study.

Through corridor planning, the costs associated with environmental review and approval are greatly reduced. However, another extremely important factor in utility decision making—risk—is also greatly reduced. Before utility management approves a project, uncertainties in regulatory approvals are carefully considered. By using corridors designated in land management plans, utilities can significantly lessen uncertainties in project planning. Timely approval, together with

knowledge that the economic project envisioned at inception will resemble the project approved, allows utilities to pursue many alternatives that might have been discarded because of unacceptable risks.

This concept has increased validity today. Utilities, attempting to limit new generation construction, look to existing generating stations with surplus capacity. Many of these plants, designed for forecasted demands not realized due to shifts in growth and energy conservation efforts, are oversized for current demand. They now provide cost-effective alternatives to new plant construction. Transmission access to these plants is either nonexistent or constrained by systems currently loaded to capacity. The economics of pursuing transmission of regional surpluses for displacement of more costly generation can be offset by uncertainty or risks associated with environmental processes. Good resource management and energy conservation principles established in the Public Utilities Regulatory Policies Act (PURPA) can be unintentionally subverted. Utilities, faced with unacceptable new project risks, could continue to delay construction of the multibillion dollar regional intertie network necessary for cost-effective load management. The construction of regionally unneeded generation plants, to assure adequate energy to local areas, is an unacceptable cost resulting from the lack of a regional corridor system.

The Western Utility Group's corridor emphasis has always focussed on the federal land use planning process. We feel this is the most effective method for corridor planning. It allows for simultaneous consideration of competing uses and provides for interagency consistency if properly implemented. Because of the vast linear extent of corridors, the Western Utility Group is emphatic on the need for consistency among federal planning jurisdictions. A decision to designate corridors in one plan and not designate them in an adjacent continuous plan along a corridor route flaws a plan and leaves the decision maker susceptible to plan invalidation. Corridors cannot be eliminated without justification, including careful consideration of alternatives and quantification of potential economic and environmental consequences. Non-designation could contribute to potential project cancellation because of increased risk engendered in potential regulator findings of land use "inconsistency." The Western Utility Group believes the USFS/BLM has the obligation to designate corridors, but not the authority to *refuse* to designate corridors without thorough review of alternatives and consequences.

Corridors and Federal Land Use Planning

The most definitive cooperative utility-government publication on corridor planning was published July 1, 1975. The Department of the Interior's (DOI) "The Need for a National System of Transportation and Utility Corridors" was completed as directed by Section 28(s) of the Mineral Leasing Act of 1920, as amended in 1973. Section 28(s) provides:

"In order to minimize adverse environmental impacts and to prevent the proliferation of separate rights of way across federal lands, the Secretary (of the Interior) shall, in consultation with other federal and state agencies, review the need for a national system of transportation and utility corridors across federal lands and submit a report of his findings to the Congress and the President by July 1, 1975."

The study focused on lands west of the 100th meridian and considered two types of corridors, representing the extremes in corridor design:

- Joint-use Corridors—Narrow, fixed boundary corridors containing several linear rights of way for different facilities, and
- Planning Corridors—Expansive corridors with flexible, undefined boundaries. Unlike joint-use corridors, planning corridors are a product of area or regional land use plans.

The study concluded that:

- Establishment of a national system of joint-use corridors was not feasible. Joint-use corridors are too inflexible to accommodate conceptual and long-range planning.
- Establishment of planning corridors is both feasible and desirable to encourage consolidation of separate rights of way lessening overall adverse environmental effects.
- A system of planning corridors could not be implemented at this time (1975) because of insufficient information to make informed decisions on where and how corridors should be designated.

DOI made several salient suggestions including:

- Federal agencies should be directed to identify and reserve planning corridors across federal lands and specific rights of way to be located on a project-specific basis (at a later date).

• Federal land management agencies should develop a regional environmental data base in cooperation with state agencies, utilities, and concerned organizations to evaluate proposed or projected corridor needs.

The DOI study had very clear implications for utilities and utility planning processes. Federal land management agencies intended to be active participants in the utility route selection process. Public participation in decisions affecting route selection could also be anticipated. The consequences of such public involvement include increasingly lengthy project review and approval periods. Although the relocation of existing facilities into corridors was not envisioned, proliferation of separate rights of way is discouraged. If implemented as policy, corridor designation will encourage agencies to locate new facilities near existing rights of way, if in the agencies' opinion, environmental and economic costs are competitive with a separate routing.

Eleven years later, many of the findings and forecasts by the DOI study are still relevant. Its recommendations concerning corridor identification and designation were adopted in FLPMA and in the implementation regulations of the National Forest Management Act (NFMA) of 1976.

Legislative history clearly demonstrates Congressional intent to include planning for future utility uses (rights of way) within the federal land planning framework. The process to accomplish this effort is left to individual agencies and administrative units within each agency. The result has not been the regional system of corridors envisioned by the 1975 DOI study and its utility participants. Instead, a patchwork corridor policy has developed ranging from the designation of corridors to the non-consideration of corridors.

In 1976, Congress recognized the findings of the DOI study by incorporating nearly identical language from Mineral Leasing Act, Section 28(s) into FLPMA. FLPMA, Section 503, goes further than the stated goal of preventing "the proliferation of separate rights of way" by encouraging the Secretary (Agriculture and Interior) to "issue regulations containing criteria and procedures for designating (transportation and utility) corridors." Further, Congress conferred necessary authority to the appropriate Secretary to designate existing corridors "without further review." FLPMA's Section 103 and Title II, defines rights of way as a "principal or major use" of Federal lands and requires their consideration in the land use planning process (NFMA establishes similar requirements for Forest Plans). As noted in the 1975 DOI study, planning for specific, rigidly defined corridors is infeasible without project specific information. The appropriate tool is the planning corridor, in which several specific, compatible rights of way could be located.

A regional network of planning corridors is feasible and recommended by the DOI study. Subsequent legislative history and action have attempted to implement those recommendations by requiring the development of regulations and criteria for designating corridors. To assist agencies in this task, the Western Utility Group coordinated an inventory of the corridor needs of over 100 federal right of way users. The "Western Regional Corridor Study—1980," as that inventory is known, was distributed to virtually all administrative units of the Bureau of Land Management and U.S. Forest Service throughout the eleven western states. The purpose was to establish utility and transportation corridors as an issue in federal plans-thereby reaffirming congressional intent and direction, provide base data locating corridors on a regional perspective, and identify local industry coordinators to contact for further information. The 1980 study provided individual state maps depicting both existing and planning corridors.

This "Western Regional Corridor Study-1986" illustrates that some problems have been encountered on the way to implementing the regional corridor infrastructure envisioned by the 1975 DOI report, required by Congress, and fully supported by the Western Utility Group and other federal land users. Generally, the Western Utility Group finds that delegation and responsibility dispersal have led to a multitude of interpretations of Congressional intent, priority, and need concerning corridor planning. The Western Utility Group in 1986 repeats, with justification, its concerns of six years ago: *Corridors must be designated on a regional-network basis. Management directives assuring this must be established and incorporated in all land use plans.*

Corridor Plan Development

Utility and transportation corridors are among the many current and future land uses considered in the federal land use planning process. The development of the utility and transportation components of a land use plan requires a familiarity with:

- Plan Implementation Guidance
- Existing Facilities and Land Uses
- Utility Resource Plans

- General Corridor Studies
- Project Corridor Studies
- Key Planning Concepts

Plan Implementation Guidance relevant to federal corridor planning efforts can be found in a variety of policies, agreements, directives, and plans including:

- Long Range Energy Corridor Requirement for the Pacific Northwest, Joint BPA/USFS Work Group; April, 1977.
- California Desert Conservation Area Plan, BLM, 1980.
- The Western Regional Corridor Study, Western Utility Group, May, 1980
- Utility Transportation Corridor Study for Montana, State of Montana, USFS, BLM, November, 1981.
- Forest Service, BLM Interagency Work Plan, and Interim BLM Standards and Guidelines for Utility and Transportation Corridor Planning/Designation, BLM, Oregon State Office, July, 1981.
- A proposal for Coordinated Corridor Planning Direction on NFS lands in the western states, USFS, July, 1982.
- Utility and Transportation Corridor Planning in Resource Management Plans, BLM Instruction Memorandum No. NV-83-83, December, 1982.

A review of these documents and others listed in Table 1 will identify isolated federal commitments to corridor planning. A substantial federal effort to achieve inter- and intra-jurisdictional planning continuity is also evident. Many good concepts and principles emerge from these documents.

Existing Facilities or Utility Land Uses including roads, aqueducts, pipelines, and transmission line rights of way may be within established corridors. In most cases, uses within or adjacent to the right of way are compatible or are "adjusted" to the presence of a specific facility. In the case of transmission lines, access necessary for construction and service are a significant contributing factor to environmental impact, project expense and feasibility. Roads, canals, and other similar linear facilities provide opportunities for future lines with minimal net environmental impact.

Utility Resource Plans or similar documents, are produced by each utility and may be available for the federal planners' use (some are considered proprietary and special arrangements may be necessary). Use of these plans is optional and provides little precise information concerning location of future facilities. However, careful reading can provide the planner with the utility's forecast of future energy sources. This can be translated into rough time frames of when certain corridors will be used, which in turn could lead to "importance" or "significance" levels being assigned to corridor proposals. In general, this amount of analysis exceeds practicality as it contributes minimally to overall corridor planning credibility.

Table I
Corridor Plan Development

Step	Implementation Guidance
1. Need For Corridor Planning	• FLPMA and NFMA • Mineral Leasing Act (Section 28(s)), "The Need for a National System of Transportation and Utility Corridors" • Public Utility Regulatory Policies Act • FLPMA, Section 503 • Utility industry working groups
2. Authority to Designate Corridors	• Federal Land Policy and Management Act • National Forest Management Act
3. Corridor Inventory	• Inter-governmental working groups; "Utility Transportation Corridor Study for Montana" (State of Montana, USFS and BLM) • Utility working groups: "Western Regional Corridor Study" (Western Utility Group) • Joint industry-government working groups: "Long Range Energy Corridor Requirements for the Pacific Northwest" (Bonneville Power Administration, U.S. Forest Service) and Joint-Use Advisory Committee for Desert Area Conservation Plan (public land users, Bureau of Land Management) • "Intertie Corridor Evaluation Report" (BPA, Utilities, USFS BLM)

4. Planning Criteria and Guidance	• "Forest Service-BLM Interagency Work Plan and Interim BLM Standards and Guidelines for Utility and Transportation Planning and Designation" • A proposal for Coordinated Corridor Planning Direction on NFS lands in the "Western States" • Instruction Memorandum No. NV-8383, "Utility and Transportation Corridor Planning in Resource Management Plans" (BLM) • 1623-Supplemental Program Guidance for land resources (BLM) • Land Management Planning Direction (USFS, Region 5)
5. Plan and Policy Development	• California Desert Conservation Area Plan

General Corridor Studies can provide an important regional perspective. Western Utility Group's Western Regional Corridor Study (1980 and 1986) is the best example. It is an amalgamation of corridor needs. Because no particular project is envisioned, a relative analysis of the suitability of each corridor is not part of the study. This study provides a regional perspective on the need for a regional system of corridors. Individual planning actions can be evaluated based on their effect on the regional system of corridors.

Project Corridor Studies are also important sources of information. Increased costs and regulatory uncertainties have caused the utility industry's private and public sectors to complete detailed corridor studies as components of utility management's alternative and risk analyses for each major project. These studies, usually done well in advance of larger capital commitments, and in cooperation with many organizations, provide a view into the future. Projects not opportune for construction today could eventually become a reality as adverse conditions associated with economics and risks abate. Examples of these multi-corporation, multi-agency studies are the Northern California Corridor Study (Pacific Gas and Electric Company, Sierra Pacific Power Company, and Idaho Power Company), which evaluates corridor alternatives between central California and south-central Idaho, and the Intertie Evaluation Report (Bonneville Power Administration and others), which evaluates north-south corridors from various power sources in the Pacific Northwest to California delivery points.

The Joint Use Advisory Committee used during the California Desert Conservation Area Plan development provides an excellent model for industry/government partnership in planning. The industry's initial corridor inventory was consolidated into corridors with the greatest potential for use. The results of this coordinated plan, including industry participation have led to a model corridor plan achieving environmental protection, a streamlined permitting process and a reduction in project risk when using a designated corridor.

Key Planning Concepts and their use must be clearly understood for the development of effective land use plans. The designation of "windows," is a key planning concept utilized by federal land managers. These are areas such as mountain passes or gaps between "avoidance areas" (such as national parks), or "exclusion areas" (such as wilderness areas). This type of designation is helpful to utility planners, but does not accomplish congressional intent or implement DOI's 1975 corridor study findings. Instead of windows, what is actually being shown on land use plans are "islands" without policy guidance in between. Without linear designation on federal lands, the uncertainty remains—how do you get to the window? Is right of way proliferation acceptable in all other areas except "avoidance and exclusion areas"? Where is the programmatic policy consideration for transmission lines within the plan to be found? Does every proposal using a window have to consider a multitude of alternatives in federal non-window areas? Windows, for the most part, are areas the utilities *know* by location already. They are few in number and their designation does not offer a clue on policy preference or provide meaningful justification or analysis for why the entire corridor identified was not designated.

Suggested Planning Actions

The discussion in the previous section provides a good overview of corridor planning. Not all corridor needs can be accommodated. Some existing rights of way may be located in areas not suitable for expansion; some vacant corridors may intrude into sensitive areas; some may be excellent prospects for future lines. Certain planning decisions must be made by balancing resource needs with continued and future domestic energy requirements. Table 2 lists planning actions suggested by the Western Utility Group.

Any land use plan must be flexible enough to allow for reasonable exceptions and not all exceptions necessarily constitute the need for a plan amendment.

A corridor plan, carefully considering all factors discussed previously, should not need amendment often, but should provide for plan policy exceptions to be granted after appropriate environmental documentation. Multiple exceptions may indicate the need for a major plan amendment. If the "opening" of a new corridor requires the amendment of an existing land use plan, the following items should be considered:

- Programmatic, region-based consideration of the corridor's necessity.
- Examination of alternatives to the new corridor (including alternatives to the project creating the alleged need for the new corridor).
- Full environmental analysis of a range of alternative locations for the corridor if a corridor is determined necessary in the programmatic phase.
- Public hearings.

Table 2
Suggested Planning Actions

Planning Action	Comment
1. Assess existing rights of way.	• Designate as corridors those that can be expanded (for example, additional transmission lines). Choose an appropriate width, usually two to three miles for an occupied corridor. • Provide narrative discussion on rights of way not considered available for expansion. Document reasons. • Avoid getting emersed in technical details, such as compatibility and separation. Rely on utility experts to plan for such project-specific details. • Provide general land use direction and policy.
2. Assess corridors proposed but presently unoccupied	• Review from a regional perspective. • Consider constraints and potential impacts (right of way proliferation, increased expense) if the corridor is not identified in the land use plan. • Consult with planners in adjoining jurisdictions. Develop consistent narrative on decisions to designate (or not designate) specific corridors. • Consider alternatives to the use of each corridor, and explain effects. For example: "Corridor X-Y was not designated. Use of Corridor X-Z will be encouraged instead. The use of X-Z could cause 20 miles of additional construction. This is offset by the existence of a good road network and need for protection of sensitive resources in proximity to proposed corridor X-Y." • Develop conditions for use of an unoccupied corridor. Include policy encouraging use of corridors with existing facilities and rebuilding and upgrading existing lines.
3. Prepare corridor map.	• Delineate corridors on a map, showing existing lines, other linear facilities, and designated corridors. Map scales should be standardized.
4. Discuss regulatory linkages.	• Certain actions such as reconductoring, rebuilding, and other structural alterations could be categorically excluded from NEPA documentation. • Lessen the documentation burden when locating a new facility in a designated corridor by stating no additional location alternatives need to be considered. Require an environmental assessment focussed on construction impacts only. • Make full use of existing documents prepared for other projects within the corridor to lessen documentation requirements further. • Be sure that power plant environmental impact statements, especially qualified facility proposals (alternative energy) include full discussions of transmission line connections with the purchasing and/or wheeling utility. • Finally, discourage, but do not eliminate the "opening" of new corridors.

Industry Identified Corridors

The maps at the end of this report show the industry identified regional corridor network for the eleven western states. The maps include existing (occupied) corridors and planned (unoccupied) corridors. The corridors are necessarily schematic and do not always reflect site specific engineering, environmental or topographic constraints.

All participants in the 1986 Western Regional Corridor study reserve the right to provide additional information on corridor location requirements directly to the land management agencies. Additionally, all contributors are willing to meet with public agencies to discuss individual organizational needs and concerns.

Study Participants and Western Utility Group Membership

Western Regional Corridor Study Participants

Chairman, Western Utility Group:
John Cheek, Pacific Power and Light Company

Chairman, Corridor Committee:
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- California - Dale Woodward, Southern California Edison Company
- Colorado - Jack Steck, Public Service Company of Colorado
- Idaho - David Meyers, Idaho Power Company
- Montana - Pat Reardon, Montana Power Company
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- Utah - Glen Wells, Utah Power and Light Company
- Washington - Mel Walters, Puget Sound Power and Light
- Wyoming - John Cheek, Pacific Power and Light Company

Western Utility Group Membership

Chairman - John Cheek, Pacific Power and Light Company

Members	Representative
Arizona Public Service Company	Wayne Darby
Idaho Power Company	David Meyers
Montana Power Company	Pat Reardon
Northwest Pipeline Company	Gary Roberts
Pacific Gas and Electric Company	Bruce Benzler
Pacific Power and Light Company	John Cheek
Public Service Company of Colorado	Jack Steck
Public Service Company of New Mexico	Wayne Eckles
Puget Sound Power and Light	Mel Walters
Salt River Project	Bob Babcock
San Diego Gas and Electric Company	Jay Barnett
Sierra Pacific Power Company	Stephen Younkin
Southern California Edison Company	Dale Woodward
Southern California Gas Company	Mark Gaines
Utah Power and Light Company	Glen Wells
Washington Water Power Company	David Vill

Appendices

Appendix A
USFS and BLM Corridor Designation Inventory*

State/Agency	Corridor Designation	Plan Status***
ARIZONA		
Bureau Of Land Management		
Arizona Strip District		
Shivwitz RA	Designates Corridors	Final 1/81
Vermillion RA	Does Not Designate Corridors	Final 4/74
Phoenix District		
**Kingman RA	Designates Corridors	Final 6/80
**Lower Gila RA	Designates Corridors	Draft 1/85, Final ?
Phoenix RA	Designates Corridors	Draft 5/87, Final ?
Safford District	Does Not Designate Corridors	Draft 1/88, Final ?
Yuma District	Designates Corridors	Draft 12/84, Final 5/86
U.S. Forest Service		
Apache-Sitgreaves NF	Does Not Designate Corridors	Draft 2/86, Final 2/87
Coconino NF	Designates Corridors	Draft 12/85, Final 2/87
Coronado NF	Designates Corridors	Draft 6/85, Final 10/86
Kaibab NF	Designates Corridors	Draft 7/86, Final ?
Prescott NF	Designates Corridors	Draft 4/86, Final 2/87
Tonto NF	Designates Corridors	Draft 1/85, Final 10/85
CALIFORNIA		
Bureau Of Land Management		
Bakersfield District		
**Bishop RA	Designates Corridors	Final 1/83
**Caliente RA	Does Not Designate Corridors	Final 9/85
Folsom RA	Does Not Designate Corridors	Draft 12/86, Final 3/87
Hollister RA	Designates Corridors	Final 8/84
California Desert District	Designates Corridors	Final 12/80
Susanville District		
Alturas RA	Does Not Designate Corridors	Draft 4/83, Final 8/84
**Eagle Lake RA	Does Not Designate Corridors	Final 8/82
**Surprise RA	Designates Corridors	Final 4/81
Ukiah District		
Arcata RA	Does Not Designate Corridors	Draft 3/87, Final ?
Clear Lake RA	Does Not Designate Corridors	Final 10/84
Redding RA	Does Not Designate Corridors	Final 12/82
U.S. Forest Service		
Angeles NF	Designates Corridors	Draft 5/85, Final 2/87
Cleveland NF	Does Not Designate Corridors	Final 6/86
Eldorado NF	Does Not Designate Corridors	Draft 8/86, Final 7/87
Inyo NF	Does Not Designate Corridors	Draft 10/86, Final 8/87

* *Current as of December 1986*
** *Multiple plans, most current plan identified*
***Information provided by individual agency administrative units.*
Date of issuance for Draft and Final Management Plans is indicated where known.

Appendix A (Continued)

State/Agency	Corridor Designation	Plan Status***
CALIFORNIA (Continued)		
U.S. Forest Service		
Klamath NF	Does Not Designate Corridors	Draft 2/87, Final ?
Lassen NF	Does Not Designate Corridors	Draft 5/86, Final ?
Los Padres NF	Does Not Designate Corridors	Draft 7/86, Final ?
LTBMU	Does Not Designate Corridors	Draft 3/86, Final 6/87
Mendocino NF	Does Not Designate Corridors	Draft 9/86, Final 2/87
Modoc NF	Designates Corridors	Draft 4/87, Final ?
Plumas NF	Does Not Designate Corridors	Draft 1/86, Final ?
San Bernardino NF	Does Not Designate Corridors	Draft 4/86, Final 9/87
Sequoia NF	Does Not Designate Corridors	Draft 11/85, Final ?
Shasta-Trinity NF	Does Not Designate Corridors	Draft 8/86, Final ?
Sierra NF	Does Not Designate Corridors	Draft 9/86, Final ?
Six Rivers NF	Does Not Designate Corridors	Draft 12/86, Final ?
Stanislaus NF	Does Not Designate Corridors	Draft 11/85, Final ?
Tahoe NF	Designates Corridors	Draft 1/86, Final 11/87
COLORADO		
Bureau Of Land Management		
Canon City District		
Northeast RA	Does Not Designate Corridors	Final 9/86
**Royal Gorge RA	Does Not Designate Corridors	Final 7/81
San Luis RA	No Decision On Corridors	Draft 1/89, Final ?
Craig District		
Kremmling RA	Does Not Designate Corridors	Final 12/84
Little Snake RA	Does Not Designate Corridors	Draft 2/86, Final ?
White River RA	Does Not Designate Corridors	Draft 4/84, Final ?
Grand Junction District		
Glenwood Springs RA	Does Not Designate Corridors	Final 1/84
Grand Junction RA	Does Not Designate Corridors	Draft 3/85, Final 2/87
Montrose District		
Gunnison RA	Does Not Designate Corridors	Final 7/81
San Juan RA	Does Not Designate Corridors	Final 9/85
Uncompahgre RA	Does Not Designate Corridors	Draft 3/87, Final ?
U.S. Forest Service		
Arapahoe-Roosevelt NF	Designates Corridors	Final 5/84
Comanche NG	Designates Corridors	Final 10/84
Grand Mesa NF	Does Not Designate Corridors	Final 10/83
Gunnison NF	Does Not Designate Corridors	Final 10/83
Pawnee NG	Does Not Designate Corridors	Final 5/84
Pike and San Isabel NF's	Designates Corridors	Final 10/84
Rio Grande NF	Designates Corridors	Final 2/85
Routt NF	Designates Corridors	Final 11/83
San Juan NF	Designates Corridors	Final 9/83
Uncompahgre NF	Does Not Designate Corridors	Final 10/83
White River NF	Designates Corridors	Final 9/84

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Appendix A (Continued)

State/Agency	Corridor Designation	Plan Status***
IDAHO		
Bureau Of Land Management		
Boise District		
Bruneau RA	Designates Corridors	Final 6/83
Cascade RA	Does Not Designate Corridors	Draft 8/86, Final 11/87
Jarbidge RA	Does Not Designate Corridors	Draft 8/84, Final 1/87
Owyhee RA	Designates Corridors	Final 5/81
Burley District		
Deep Creek RA	Does Not Designate Corridors	Final 2/81
**Snake River RA	Does Not Designate Corridors	Final 1/86
**Coeur d'Alene District	Does Not Designate Corridors	Final 11/81
Idaho Falls District	Does Not Designate Corridors	Draft 2/87, Final 10/87
Salmon District		
**Challis RA	Does Not Designate Corridors	Final 9/83
Lemhi RA	Does Not Designate Corridors	Final 7/86
**Shoshone District	Does Not Designate Corridors	Final 9/85
U.S. Forest Service		
Boise NF	Does Not Designate Corridors	Draft 4/87, Final 4/88
Cache NF	Does Not Designate Corridors	Final 10/85
Caribou NF	Does Not Designate Corridors	Final 10/85
Challis NF	Does Not Designate Corridors	Draft 10/85, Final ?
Clearwater NF	Does Not Designate Corridors	Draft 5/85, Final 6/87
Curlew NG	Does Not Designate Corridors	Final 10/85
Nez Perce NF	Does Not Designate Corridors	Draft 1/85, Final 3/87
Panhandle NF's	Does Not Designate Corridors	Draft 4/85, Final 5/87
Payette NF	Designates Corridors	Draft 8/85, Final ?
Salmon NF	Does Not Designate Corridors	Draft 10/85, Final 4/87
Sawtooth NF	Designates Corridors	Draft 11/85, Final ?
Targhee NF	Designates Corridors	Final 10/85
MONTANA		
Bureau Of Land Management		
Butte District		
Dillon RA	Does Not Designate Corridors	Final 10/79
Garnet RA	Does Not Designate Corridors	Final 12/85
Headwaters RA	Does Not Designate Corridors	Final 11/83
Lewistown District		
**Great Falls RA	Does Not Designate Corridors	Final 7/84
**Havre RA	Does Not Designate Corridors	Final 10/77
**Judith RA	Does Not Designate Corridors	Final 3/78
**Phillips RA	Does Not Designate Corridors	Final 6/74
**Valley RA	Does Not Designate Corridors	Final 10/77
Miles City District		
**Big Dry RA	Does Not Designate Corridors	Final 6/83
Billings RA	Does Not Designate Corridors	Final 9/85
Powder River RA	Does Not Designate Corridors	Final 6/85

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Appendix A (Continued)

State/Agency	Corridor Designation	Plan Status***
MONTANA (Continued)		
U.S. Forest Service		
Beaverhead NF	Does Not Designate Corridors	Draft 1/86, Final 4/86
Bitterroot NF	Does Not Designate Corridors	Draft 3/85, Final 2/87
Custer NF	Does Not Designate Corridors	Draft 4/85, Final 11/86
Deerlodge NF	Does Not Designate Corridors	Draft 4/86, Final 2/87
Flathead NF	Does Not Designate Corridors	Final 1/86
Gallatin NF	Does Not Designate Corridors	Draft 3/85, Final 7/87
Helena NF	Does Not Designate Corridors	Final 5/86
Kootenai NF	Does Not Designate Corridors	Draft 7/85, Final 3/87
Lewis & Clark NF	Does Not Designate Corridors	Final 6/86
Lolo NF	Does Not Designate Corridors	Final 4/86
NEVADA		
Bureau Of Land Management		
Battle Mountain District		
Shoshone-Eureka RA	Designates Corridors	Final 2/86
Tonopah RA		
(Esmeralda County)	Designates Corridors	Final 10/86
(No. Nye County)	Designates Corridors	Final 6/81
Carson City District		
Lahontan RA	Designates Corridors	Final 12/85
Walker RA	Designates Corridors	Final 6/86
Elko District	Designates Corridors	Draft 8/85, Final 1/87
**Ely District	Designates Corridors	Final 6/83
Las Vegas District		
Caliente RA	Designates Corridors	Final 2/82
Stateline RA		
(Clark County)	Does Not Designate Corridors	Final 1/84
(So. Nye County)	Designates Corridors	Final 10/86
Winnemucca District	Designates Corridors	Final 7/82
U.S. Forest Service		
Humboldt NF	Designates Corridors	Final 8/86
Toiyabe NF	Designates Corridors	Final 7/86
NEW MEXICO		
Bureau Of Land Management		
Albuquerque District		
Farmington RA	Does Not Designate Corridors	Draft 3/87, Final 9/87
Rio Puerco RA	Designates Corridors	Final 1/86
Taos RA	Does Not Designate Corridors	Draft 3/87, Final 9/87
Las Cruces District		
Las Cruces/Lordsburg RA	Designates Corridors	Final 2/82
Socorro RA	No Decision on Corridors	Draft 2/88, Final ?
White Sands RA	Does Not Designate Corridors	Final 9/85

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Appendix A (Continued)

State/Agency	Corridor Designation	Plan Status***
NEW MEXICO (Continued)		
Bureau Of Land Management		
Roswell District		
Carlsbad RA	Designates Corridors	Draft 2/86, Final ?
Roswell RA	Does Not Designate Corridors	Final 8/80
U.S. Forest Service		
Carson NF	Designates Corridors	Draft 2/85, Final 10/86
Cibola NF	Designates Corridors	Final 7/85
Gila NF	Designates Corridors	Draft 5/85, Final 11/86
Kiowa NG	Does Not Designate Corridors	Final 7/85
Lincoln NF	Designates Corridors	Draft 6/85, Final 11/86
Rita Blanca NG	Does Not Designate Corridors	Final 7/85
Santa Fe NF	Designates Corridors	Draft 1/86, Final 4/87
OREGON		
Bureau Of Land Management		
**Burns District	Designates Corridors	Final 8/85
Coos Bay District	Designates Corridors	Final 4/83
Eugene District	Designates Corridors	Final 9/83
**Lakeview District	Designates Corridors	Final 1/83
**Medford District	Designates Corridors	Final 10/80
**Prineville District	Designates Corridors	Final 2/85
Roseburg District	Designates Corridors	Final 9/83
**Salem District	Designates Corridors	Final 12/83
**Vale District	Designates Corridors	Draft 4/86, Final 2/87
U.S. Forest Service		
Crooked River NG	Designates Corridors	Draft 9/86, Final ?
Deschutes NF	Does Not Designate Corridors	Draft 3/86, Final ?
Fremont NF	Designates Corridors	Draft 1/87, Final ?
Malheur NF	Does Not Designate Corridors	Draft 3/87, Final ?
Mt. Hood NF	Does Not Designate Corridors	Draft 3/87, Final 3/88
Ochoco NF	Does Not Designate Corridors	Draft 9/86, Final ?
Rogue River NF	Does Not Designate Corridors	Draft 2/87, Final ?
Siskiyou NF	Does Not Designate Corridors	Draft 3/87, Final ?
Siuslaw NF	Does Not Designate Corridors	Draft 11/86, Final ?
Umpqua NF	Does Not Designate Corridors	Draft 4/87, Final ?
Wallowa-Whitman NF	Designates Corridors	Draft 2/86, Final 7/87
Willamette NF	Does Not Designate Corridors	Draft 4/87, Final ?
Winema NF	Designates Corridors	Draft 2/87, Final ?

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Appendix A (Continued)

State/Agency	Corridor Designation	Plan Status***
UTAH		
Bureau Of Land Management		
Cedar City District		
Beaver River RA	Designates Corridors	Final 10/86
Dixie RA	Designates Corridors	Draft 11/87, Final ?
Escalante RA	Does Not Designate Corridors	Final 4/81
Kanab RA	Does Not Designate Corridors	Final 4/81
Moab District		
Grand RA	Does Not Designate Corridors	Final 6/85
Price River RA	Does Not Designate Corridors	Final 9/83
San Juan RA	Designates Corridors	Draft 6/86, Final 6/87
San Rafael RA	Does Not Designate Corridors	Final 10/79
Richfield District		
Henry Mountain RA	Designates Corridors	Final 5/82
House Range RA	Does Not Designate Corridors	Final 10/86
Sevier River RA	Designates Corridors	Final 7/81
Warm Springs RA	Designates Corridors	Final 10/86
Salt Lake District		
**Bear River RA	Does Not Designate Corridors	Final 6/86
Pony Express RA	Does Not Designate Corridors	Final 5/84
Vernal District		
Book Cliffs RA	Designates Corridors	Final 6/85
**Diamond Mountain RA	Does Not Designate Corridors	Final 5/80
U.S. Forest Service		
Ashley NF	Does Not Designate Corridors	Final 10/86
Dixie NF	Designates Corridors	Final 9/86
Fishlake NF	Designates Corridors	Draft 5/86, Final 3/87
Manti-Lasal NF	Designates Corridors	Final 11/86
Uinta NF	Designates Corridors	Final 10/84
Wasatch-Cache NF	Designates Corridors	Final 11/85
WASHINGTON		
Bureau Of Land Management		
Spokane District	Designates Corridors	Draft 8/85, Final 3/87
U.S. Forest Service		
Colville NF	Does Not Designate Corridors	Draft 1/87, Final ?
Gifford Pinchot NF	Does Not Designate Corridors	Draft 1/87, Final 10/87
Mt. Baker-Snoqualmie NF	Does Not Designate Corridors	Draft ? Final ?
Okanogan NF	Designates Corridors	Draft 7/86, Final ?
Olympic NF	Does Not Designate Corridors	Draft 11/86, Final 11/87
Umatilla NF	Does Not Designate Corridors	Draft 1/87, Final ?
Wenatchee NF	Designates Corridors	Draft 6/86, Final 11/87

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Appendix A (Continued)

State/Agency	Corridor Designation	Plan Status***
WYOMING		
Bureau Of Land Management		
Casper District		
Buffalo RA	Designates Corridors	Final 10/85
Newcastle RA	Designates Corridors	Final 2/82
Platte River RA	Designates Corridors	Final 7/85
Rawlins District		
Divide RA	Does Not Designate Corridors	Draft 2/87, Final ?
Lander RA	Does Not Designate Corridors	Draft 4/86, Final ?
Medicine Bow RA	Does Not Designate Corridors	Draft 2/87, Final ?
Rock Springs District		
Green River RA	Does Not Designate Corridors	Final 4/82
Kemmerer RA	Does Not Designate Corridors	Final 9/86
Pinedale RA	Does Not Designate Corridors	Draft 1/87, Final 11/87
Worland District		
Cody RA	Designates Corridors	Draft 9/87, Final ?
Grass Creek RA	Designates Corridors	Final 7/83
Washakie RA	Designates Corridors	Draft 11/86, Final 9/87
U.S. Forest Service		
Bighorn NF	Does Not Designate Corridors	Final 10/85
Black Hills NF	Does Not Designate Corridors	Final 8/83
Bridger-Teton NF	Does Not Designate Corridors	Draft 10/86, Final 9/87
Medicine Bow NF	Designates Corridors	Final 10/85
Shoshone NF	Does Not Designate Corridors	Final 4/86
Thunder Basin NG	Designates Corridors	Final 10/85

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** *Multiple plans, most current plan identified*

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Appendix B
Corridor Study Participant Comments

Montana

Utility and transportation corridor recognition and planning has advanced in Montana since the original Western Regional Corridor Study was published in 1980. In 1981, the Utility-Transportation Corridor Study for Montana was prepared through a joint effort by the State of Montana, the Northern Region of the U.S. Forest Service and the Montana State Office of the Bureau of Land Management which in part recommended:

1. The continuance of intergovernmental cooperation for future corridor planning in Montana;
2. Adoption of the combined window, exclusion area and avoidance area concept for identifying and selecting corridors in Montana;
3. Establishment of a joint federal/state Corridor Oversight Committee; and
4. Advancement of Montana's joint corridor planning approach to other federal and state agencies in the West.

In 1982, the Corridor Oversight Review Committee (CORC) was established by the Governor of Montana, the Regional Forester for the Northern Region and the Montana State Director of the Bureau of Land Management. The CORC, with its four-member body, is responsible for conducting joint reviews of land management plans as they relate to corridors and facilitating joint reviews of major linear facilities in order to achieve intergovernmental consistency in these endeavors. It is the CORC's role to provide advice and recommendations to the head of the agency or unit of government responsible for preparing a land use plan or the lead agency responsible for coordinating the review of a major linear facility. The CORC intends to publish a "Corridor Map Composite" of Montana in the near future which incorporates windows, exclusion areas and avoidance areas from Forest Service, Bureau of Land Management and State plans once final or interim plans are in place. Perhaps the success of the CORC can be summarized from a quotation from the Western Interstate Energy Board in their letter of November 25, 1981, which reads, "The status of cooperation in Montana is ground breaking, far ahead of the progress being made in other parts of the West..."

At the present time, Forest Plans have been completed for the Beaverhead, Flathead, Helena, Lewis and Clark and Lolo National Forests, and Forest Plans are being finalized for the Bitterroot, Kootenai, Custer, Gallatin and Deerlodge National Forests. Resource Management Plans for the Bureau of Land Management have been completed for the Garnet, Headwater, Billings and Powder River Resource Areas, and other planning units are being managed under interim planning procedures. Although none of the final Forest Plans or Resource Management Plans have actually designated corridors for existing or future linear facilities, all, but the Billings Resource Management Plan, which will apply corridor planning criteria, have identified windows, exclusion areas and avoidance areas within the planning units, and all final plans recognize that utility and transportation corridors are legitimate uses of public lands. Special mention is made of the Headwaters Resource Management Plan which treats utility and transportation corridors as one of the 11 key resource management issues in the planning unit.

While there is not consistency in the land use plans for public lands in Montana regarding utility and transportation corridors, and in spite of the fact that a review of all plans indicates that no actual corridors have been designated, existing major utility and transportation facilities are generally identified in each plan and clarifications are made in most plans that future corridor considerations will be handled on a case-by-case basis. Although there is some disappointment that more has not been done in recognizing corridor needs and designating existing and future corridors; cooperation, communication and coordination continue to improve, and there is optimism that corridor issues on public lands will be given adequate consideration and proper recognition to meet existing and future needs and requirements.

Nevada

Nevada is by far the most "federalized" of the 48 conterminous states, with about 80 percent being under BLM and U.S. Forest Service administration. Nevada is also uniquely positioned between Rocky Mountain and Pacific Northwest energy sources and California and Southwestern consumption centers. As such, good corridor planning is essential in this keystone state.

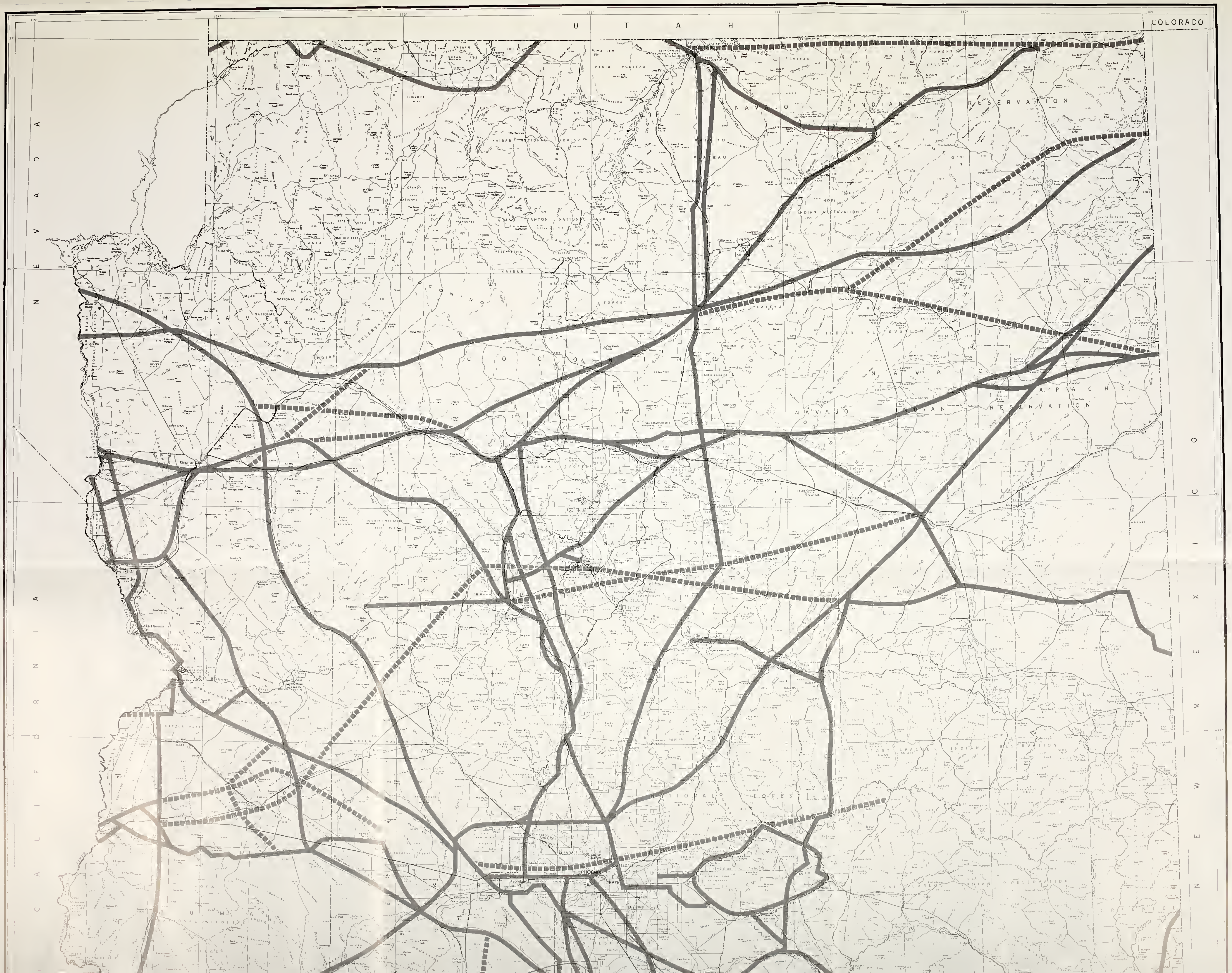
Both the Nevada BLM organization and U.S. Forest Service Region 4 have been supportive of corridor planning. This has resulted in an excellent designation history for Nevada land use plans, which will hopefully continue as all jurisdictions complete new planning. U.S. Forest Service Region 5 (California) has not been as supportive of designations, and some corridor "dead ends" and "bottlenecks" remain, especially

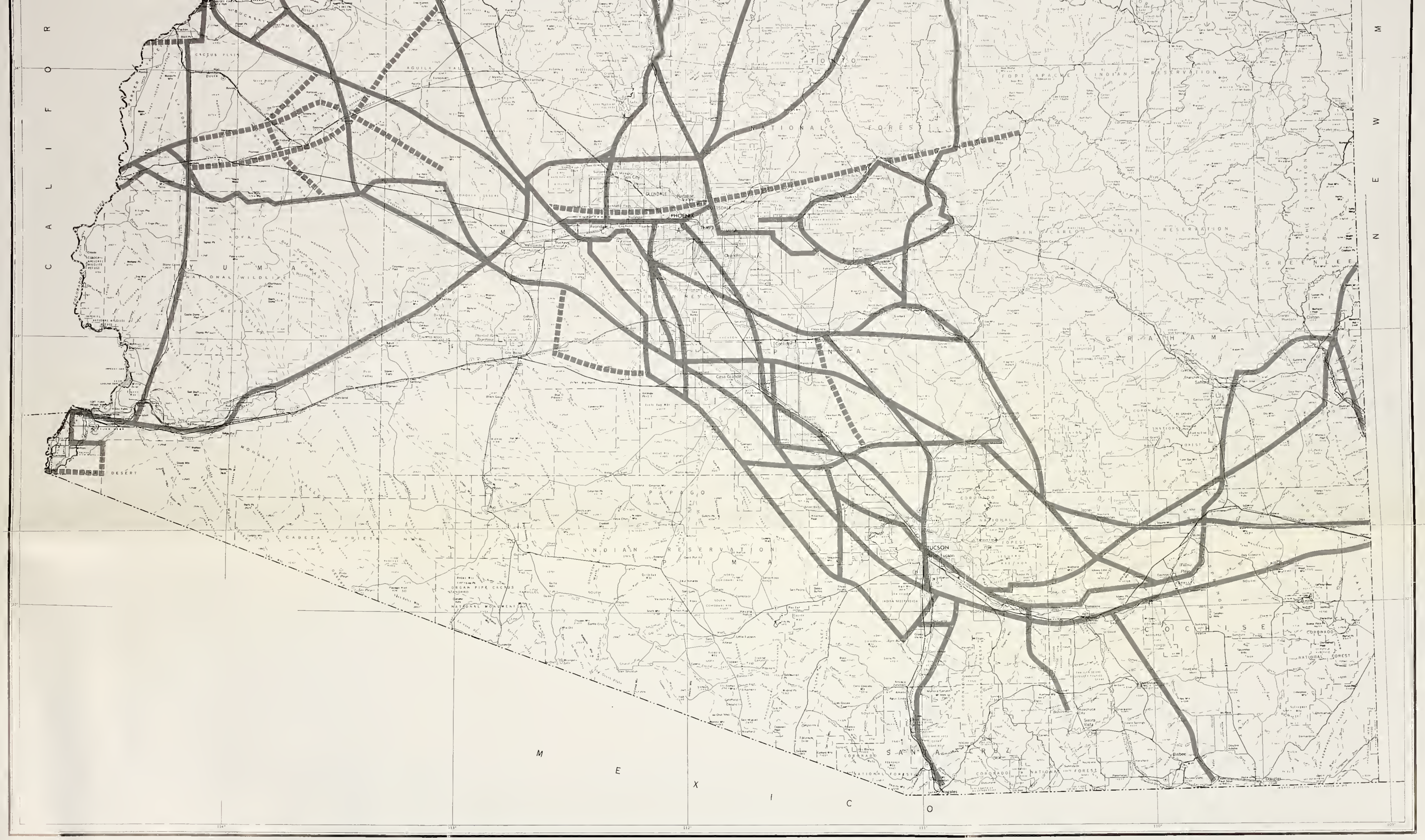
along the Sierra Nevada, where topography extremely limits logical corridor paths.

Smaller load centers typical of rural Nevada, are frequently separated by long distances. Existing corridors in these areas tend to be occupied by transmission lines of lower voltages than those found in more populated states. As a result, some of the corridors shown on the Nevada corridor map include line voltages as low as 55 kV.

Washington

The State of Washington has included transmission lines as small as 69 kV on the state corridor map. These smaller voltage lines were delineated because in many cases they are located in important corridors. Corridors which represent the only passage way across mountain passes where topography, political and environmental constraints can limit the construction of additional transmission facilities. Because of these limiting factors it is of utmost importance that regulatory agencies be aware of important corridors regardless of the voltage of the existing facilities.


U T A H
COLORADO
N E V A D A
C A L I F O R N I A
N E W M E X I C O
PARIA PLATEAU
NAVAJO INDIAN RESERVATION
KAIBAB NATIONAL FOREST
GRAND CANYON NATIONAL PARK
HOPI INDIAN RESERVATION
LAKE MEAD NATIONAL PARK
MOHAVE
C O C O N I N O
NAVAJO INDIAN RESERVATION
APACHE
Kingman
FLAGSTAFF
Winslow
Lake Havasu
FORT APACHE INDIAN RESERVATION
SAN CARLOS INDIAN RESERVATION
GLENDALE
PHOENIX
SCOTTSDALE



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

ARIZONA

Legend

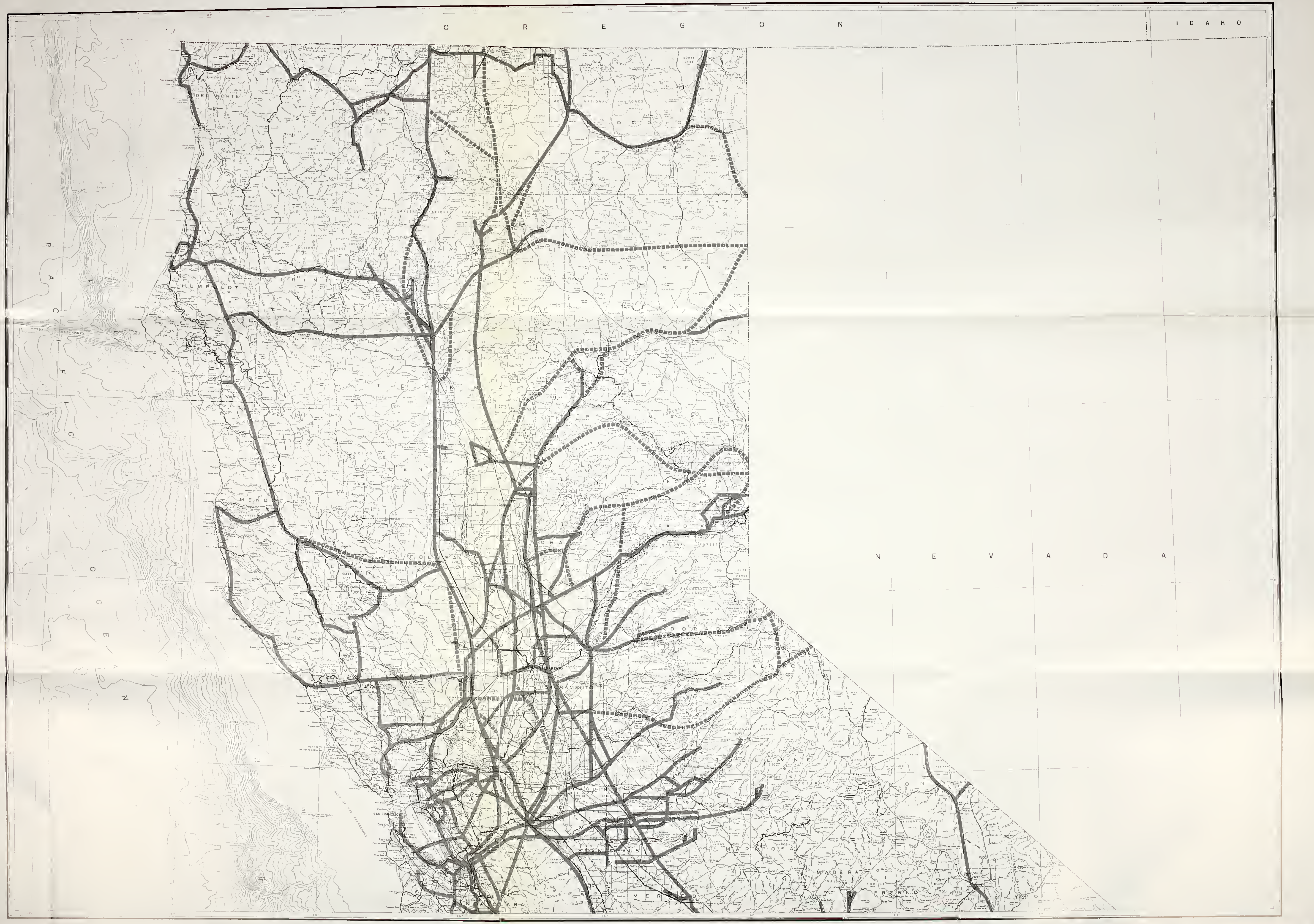
Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group
By
Michael Clayton & Associates



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

NORTHERN CALIFORNIA

Legend

Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group
By
Michael Clayton & Associates

Western Regional Corridor Study 1986

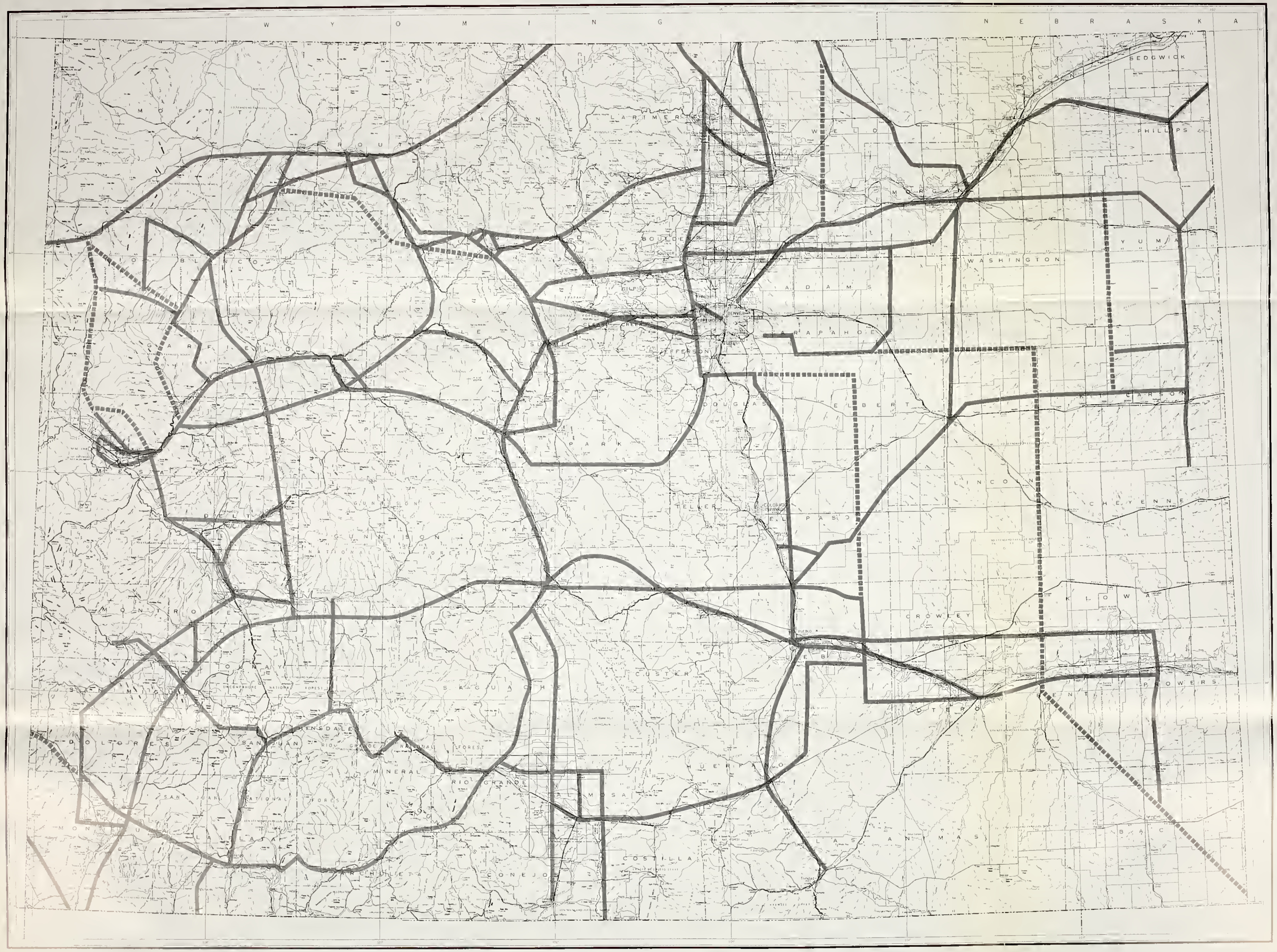
Transmission Corridors Identified by the Utility Industry

SOUTHERN CALIFORNIA

Legend
Occupied Corridors
Un-occupied Corridors

North
10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

COLORADO

Legend

Occupied Corridors

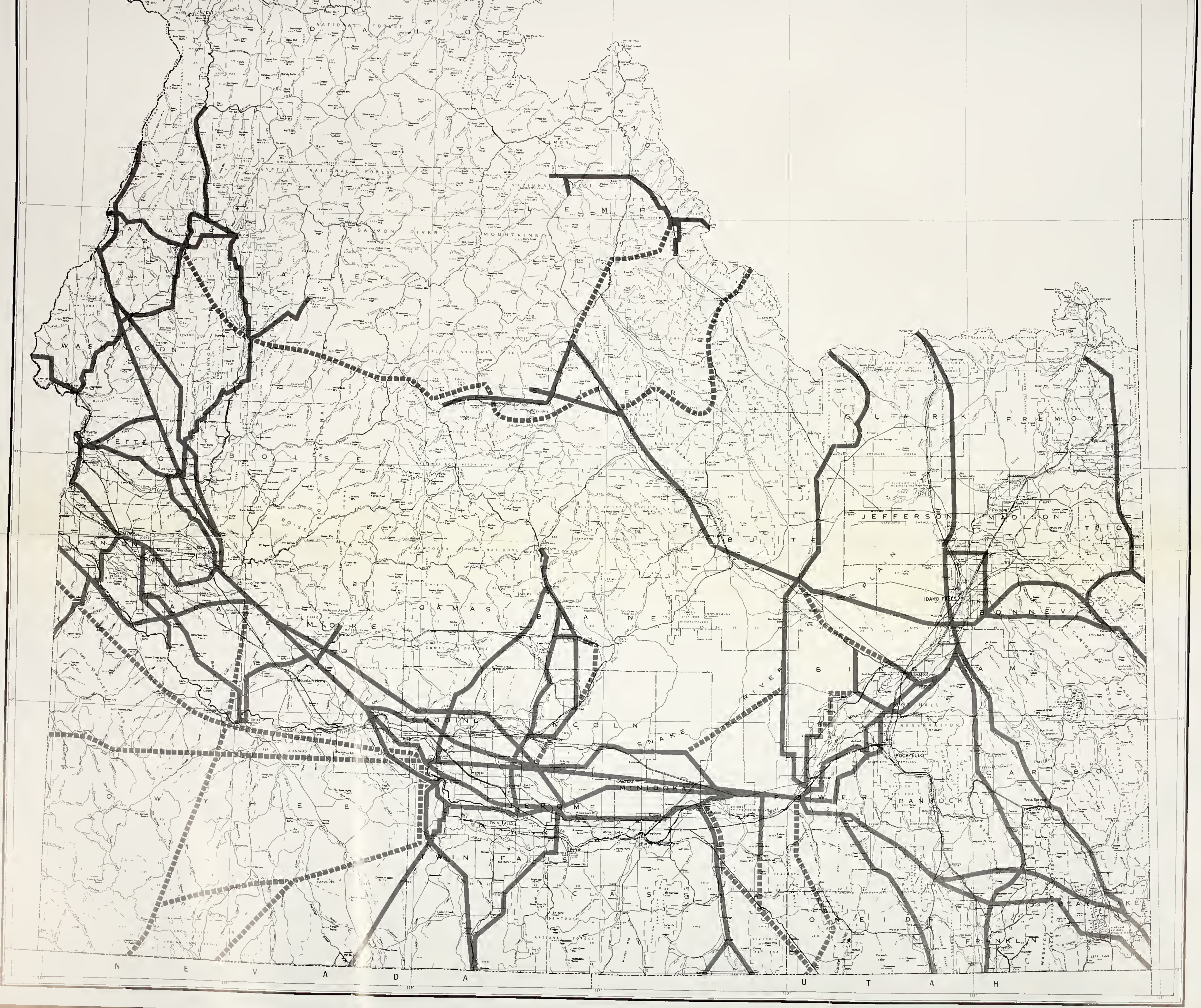
Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates

BOUNDARY
Kellogg
SHOSHONE
CLEARWATER
NEZ PERCE
SALMON RIVER
MOUNTAINS



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

IDAHO

Legend

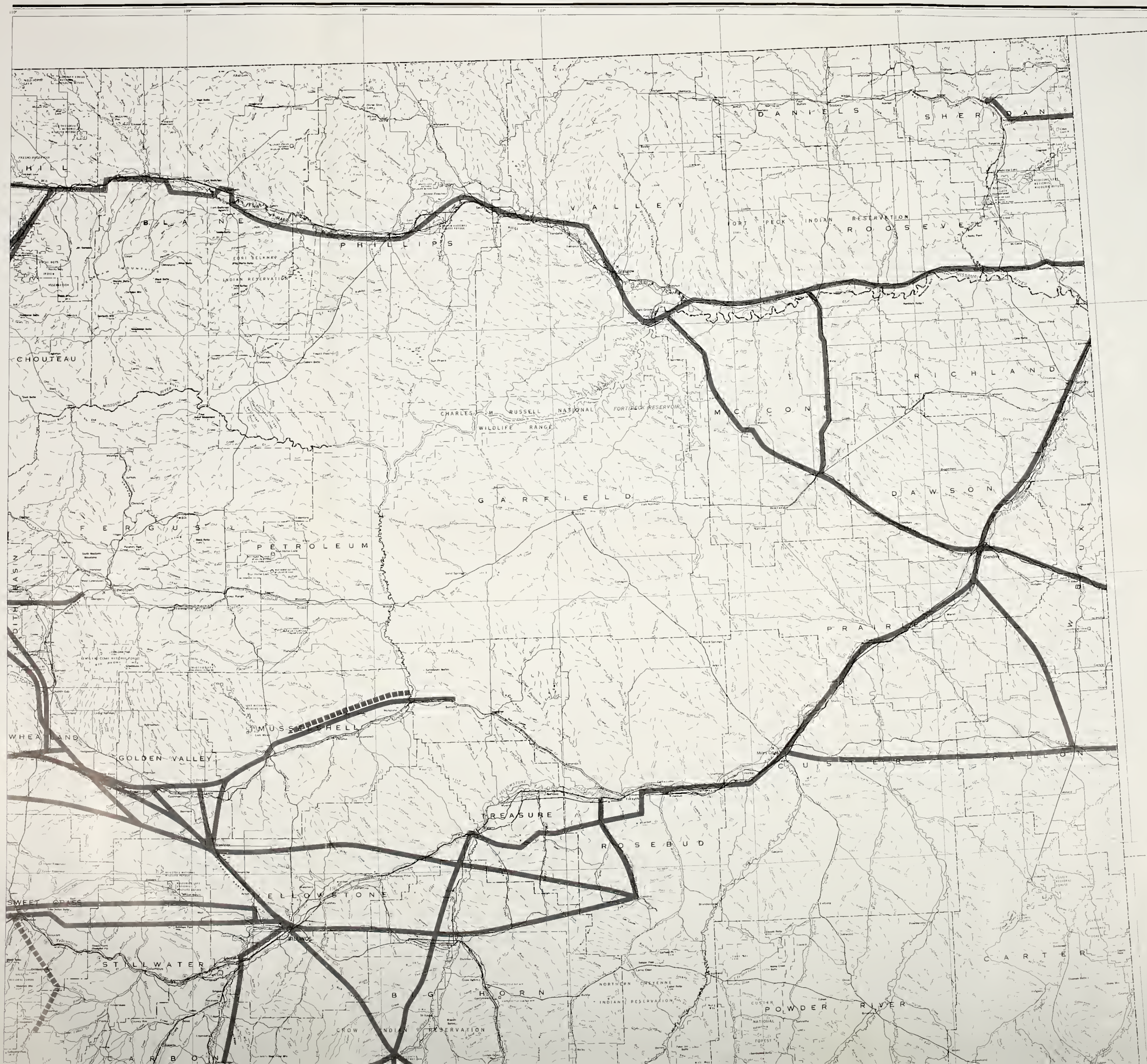
Occupied Corridors

Un-occupied Corridors

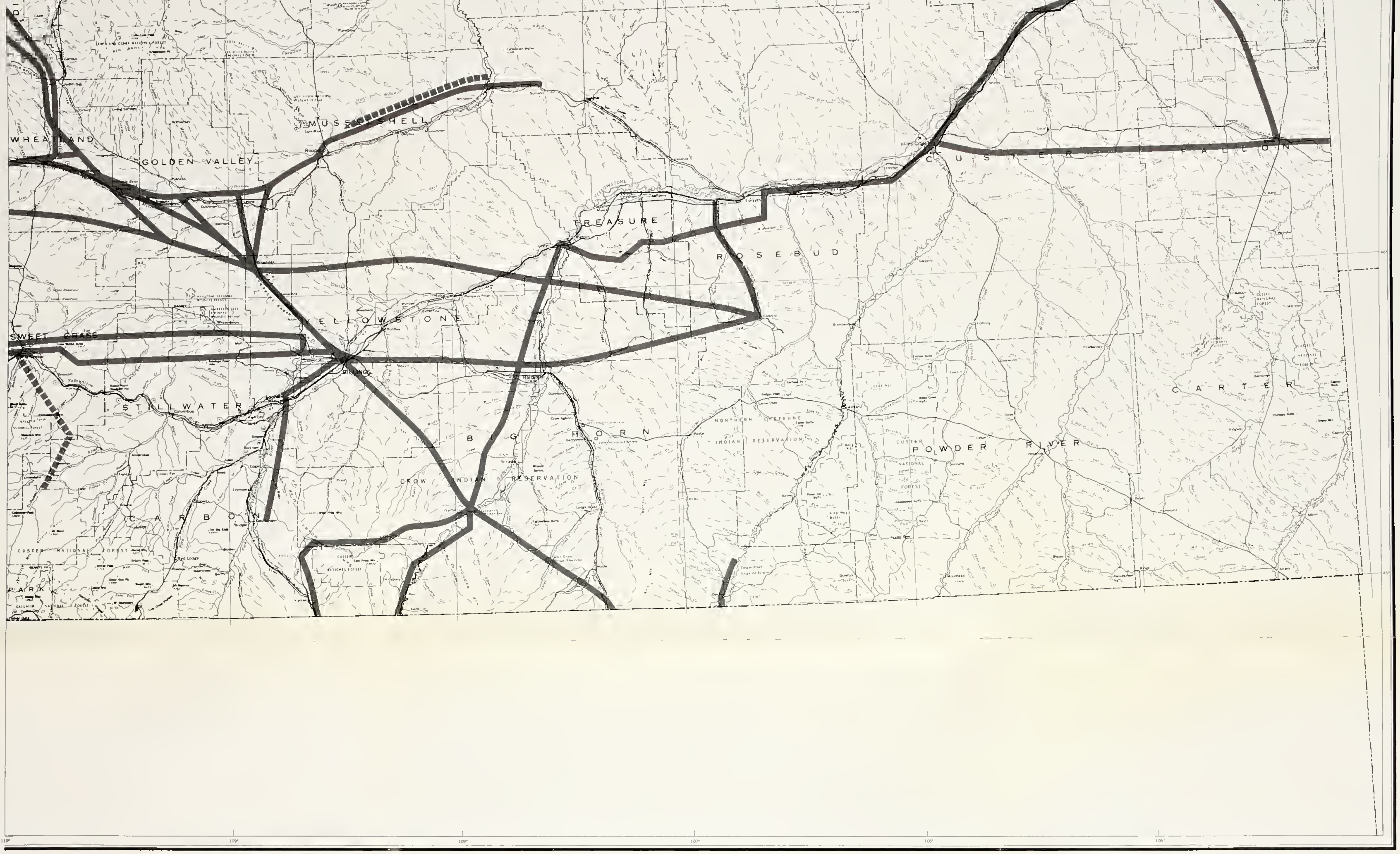
North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates



HILL
BLAINE
PHILLIPS
VALLEY
DANIELS
FORT PECK INDIAN RESERVATION
FORT BELKNAP INDIAN RESERVATION
CHOUTEAU
CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
FORT PECK RESERVOIR
RICHLAND
DAWSON
GARFIELD
FERGUS
PETROLEUM
PRAIRIE
WHEATLAND
GOLDEN VALLEY
TREASURE
ROSEBUD
YELLOWSTONE
SWEET GRASS
STILLWATER
CARTER
POWDER RIVER
NORTHERN CHEYENNE INDIAN RESERVATION
CROW INDIAN RESERVATION



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

EASTERN MONTANA

Legend

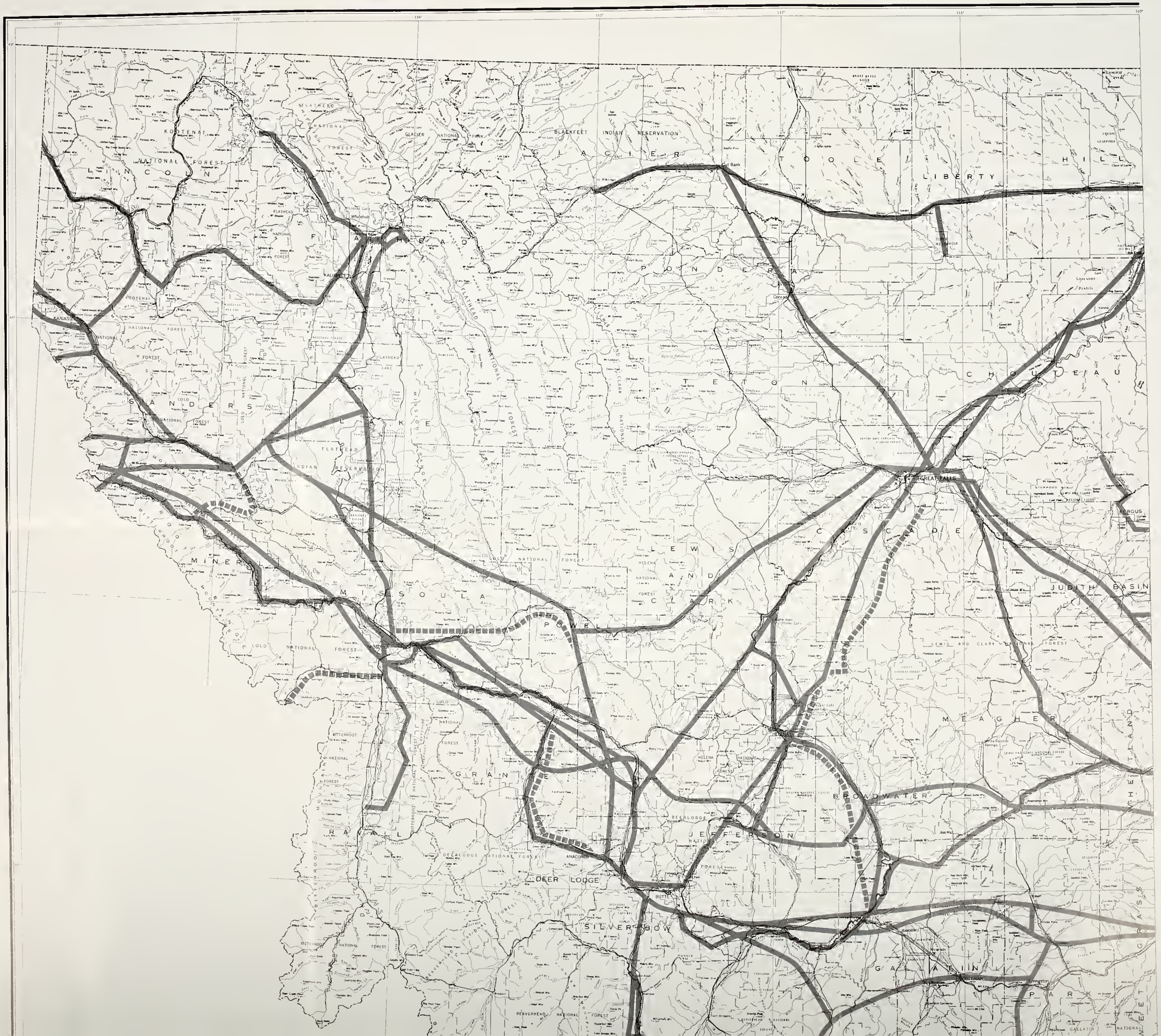
Occupied Corridors

Un-occupied Corridors

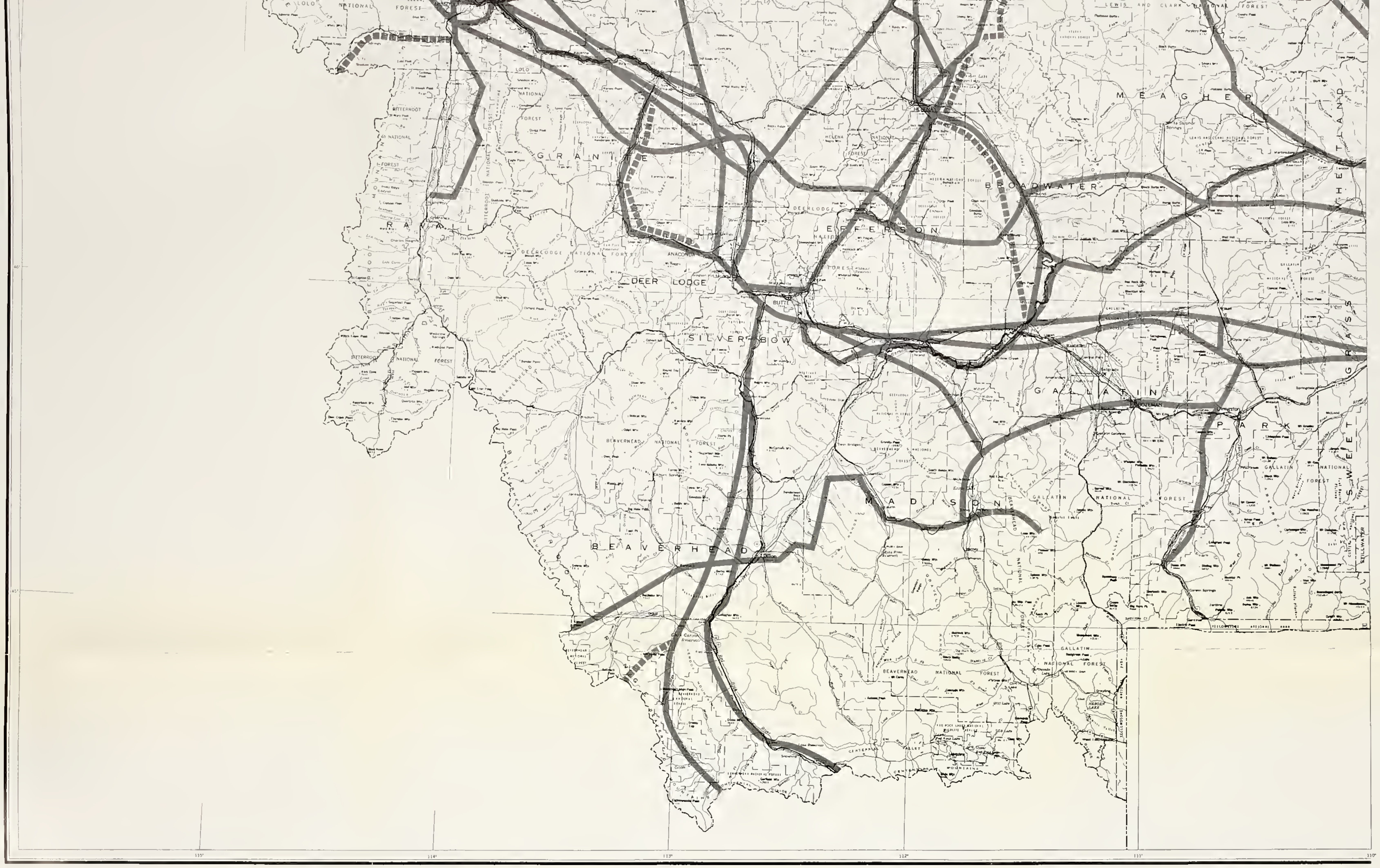
North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates



GLACIER
BLACKFEET INDIAN RESERVATION
TOOLE
LIBERTY
HILL
PONDERA
TETON
CHOUTEAU
SANDERS
MINERAL
MISSOULA
LEWIS AND CLARK
JUDITH BASIN
MEAGHER
BROADWATER
JEFFERSON
DEER LODGE
SILVER BOW
GREAT FALLS
LOLO NATIONAL FOREST
KOOTENAI NATIONAL FOREST



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

WESTERN MONTANA

Legend

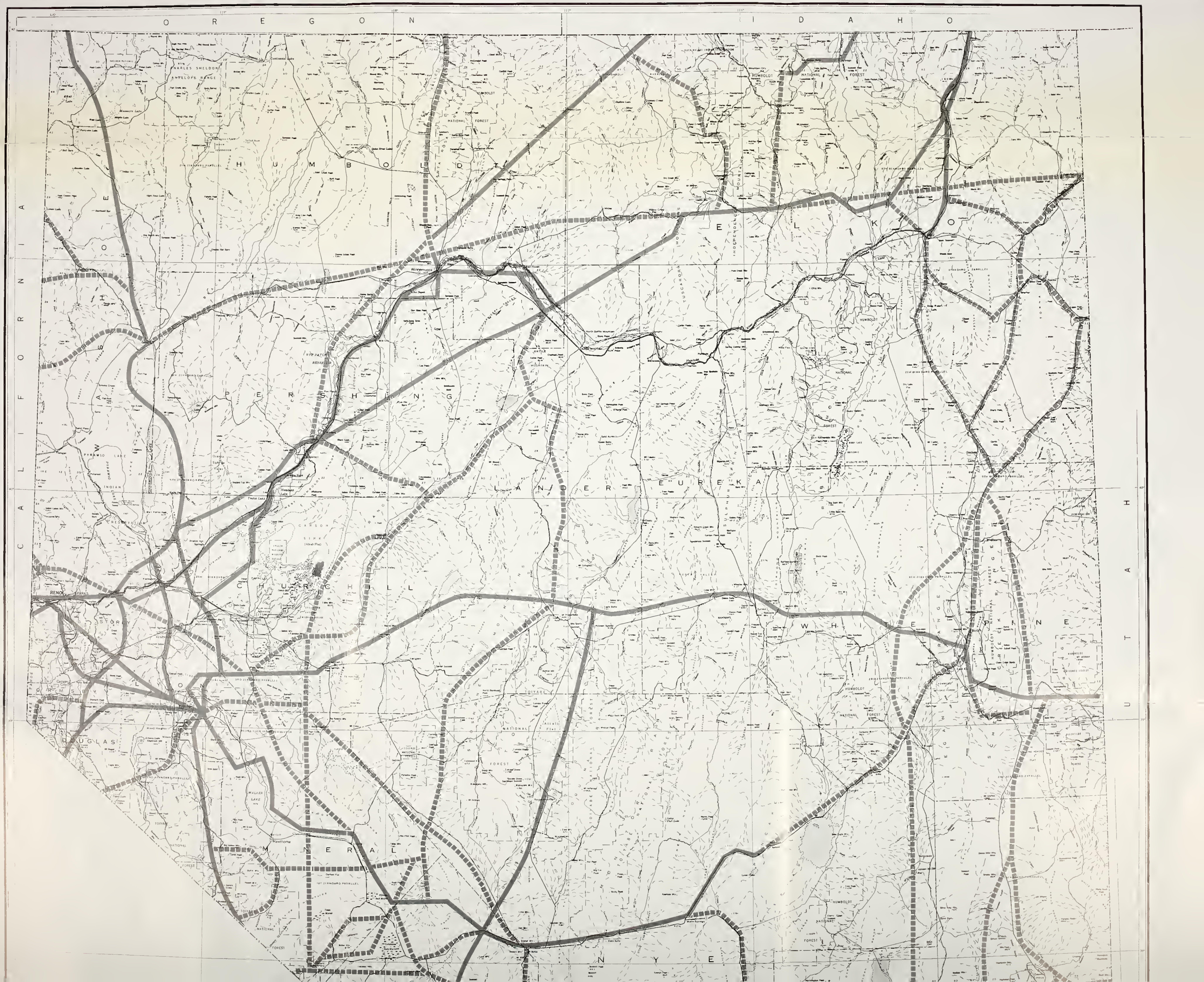
Occupied Corridors

Un-occupied Corridors

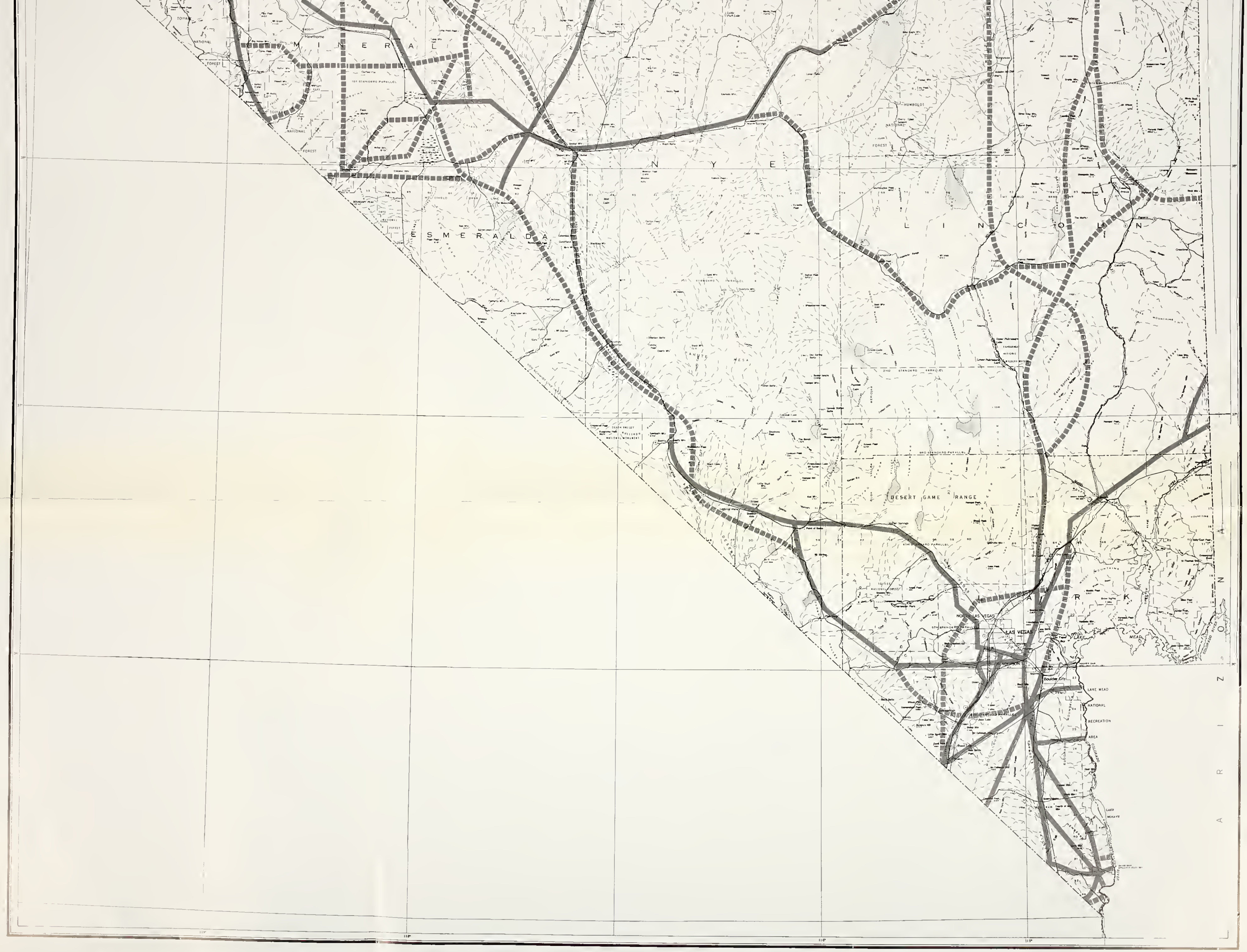
North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group
By
Michael Clayton & Associates



OREGON
IDAHO
CALIFORNIA
UTAH
HUMBOLDT
ELKO
WASHOE
PERSHING
LANDER
EUREKA
CHURCHILL
WHITE PINE
MINERAL
NYE
DOUGLAS
RENO
PYRAMID LAKE
HUMBOLDT NATIONAL FOREST



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

NEVADA

Legend

Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates

UTAH
C O L O R A D O
RIO ARRIBA
COLFAX
UNION
MORA
HARDING
McKINLEY
SANDOVAL
SAN MIGUEL
PABLO MONTOYA GRANT
Las Vegas
Gallup
Farmington
ALBUQUERQUE
VALENCIA
GUADALUPE
TORRANCE
DE BACA
SOCORRO
CATRON
LINCOLN
CHAVES
ROSWELL
T E X A S

Western Regional
Corridor Study
1986

Transmission Corridors
Identified by the
Utility Industry

NEW MEXICO

Legend

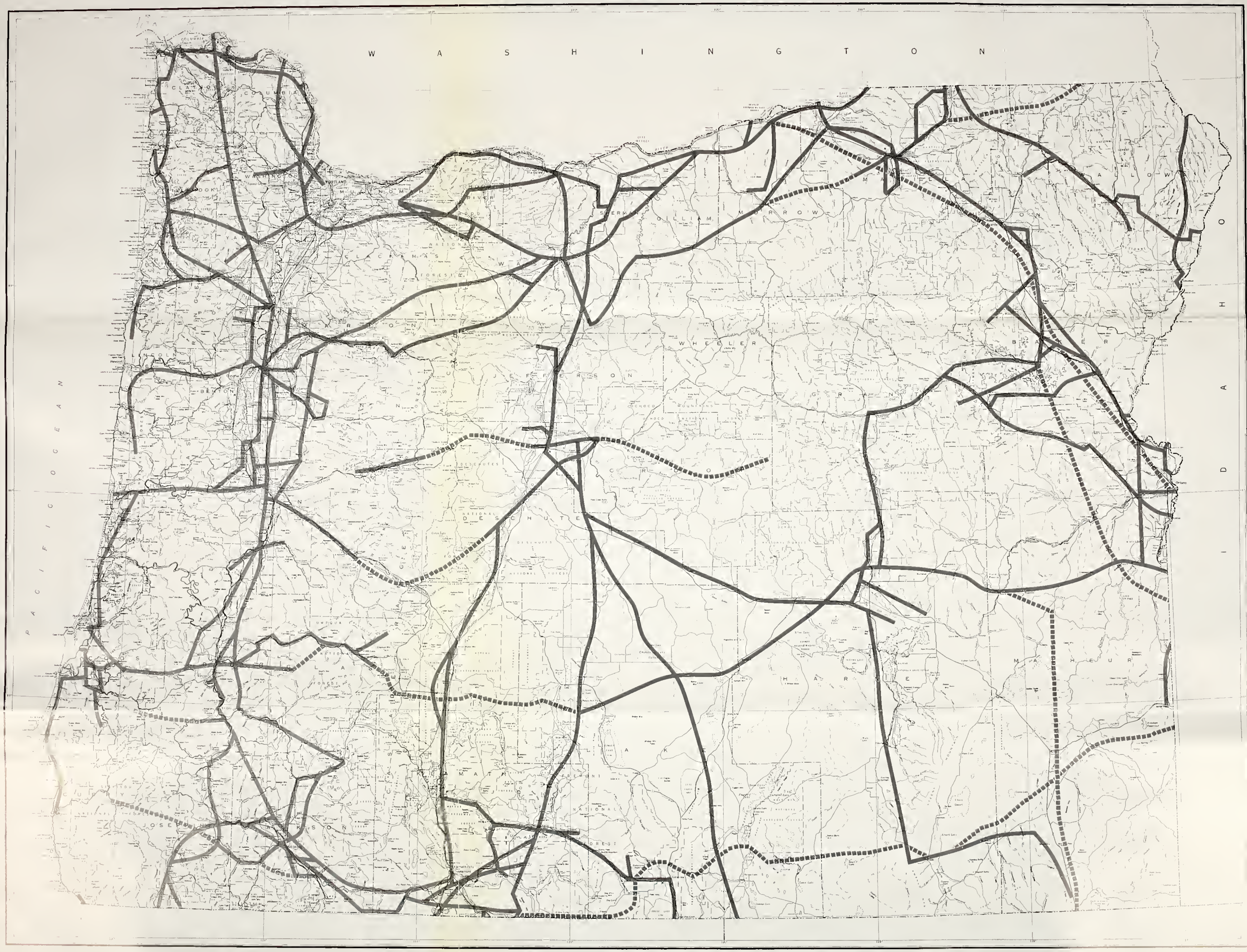
Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for
the Western Utility Group
By
Michael Clayton & Associates



Western Regional Corridor Study 1986

Transmission Corridors
Identified by the
Utility Industry

OREGON

Legend

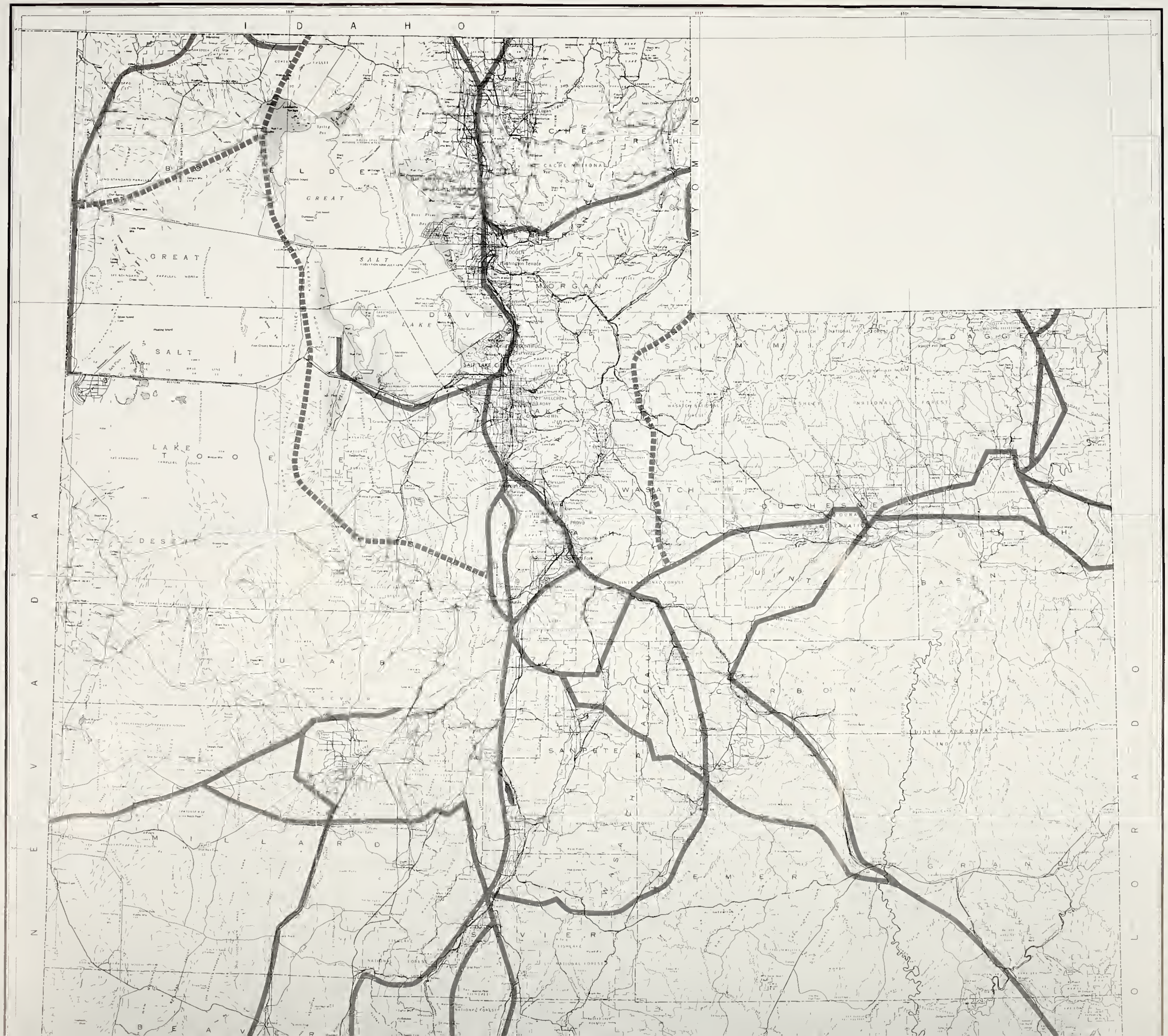
Occupied Corridors

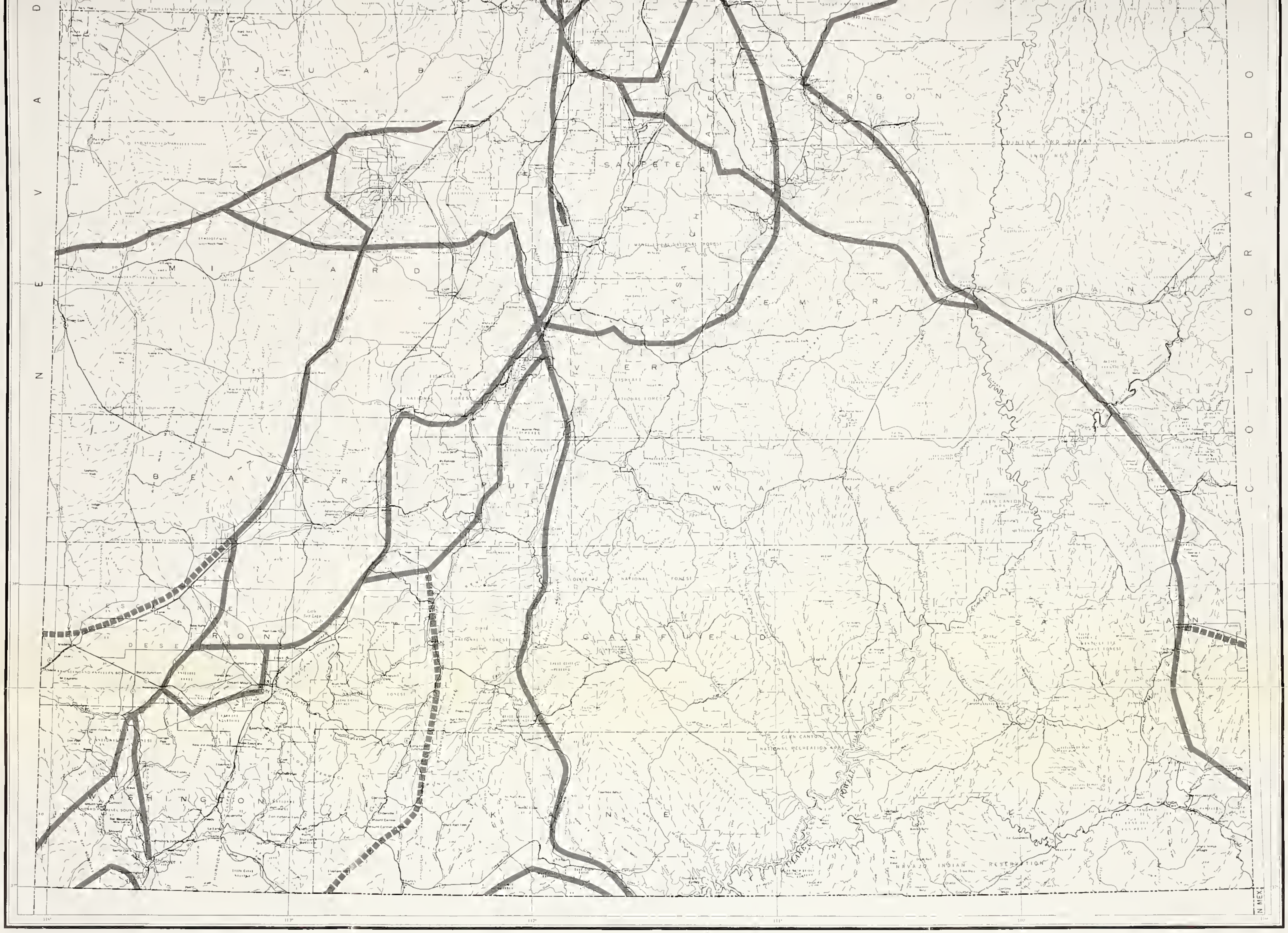
Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for
the Western Utility Group
By
Michael Clayton & Associates


I D A H O
N E V A D A
W Y O M I N G
C O L O R A D O
CACHE
MORGAN
DAVIS
GREAT
SALT
LAKE
OGDEN
PROVO
SUMMIT
WASATCH
DAGGETT
BASIN
JUAB
CARBON
SANPETE
MILLARD
SEVIER
GRAND



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

UTAH

Legend

Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates

Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

WASHINGTON

Legend

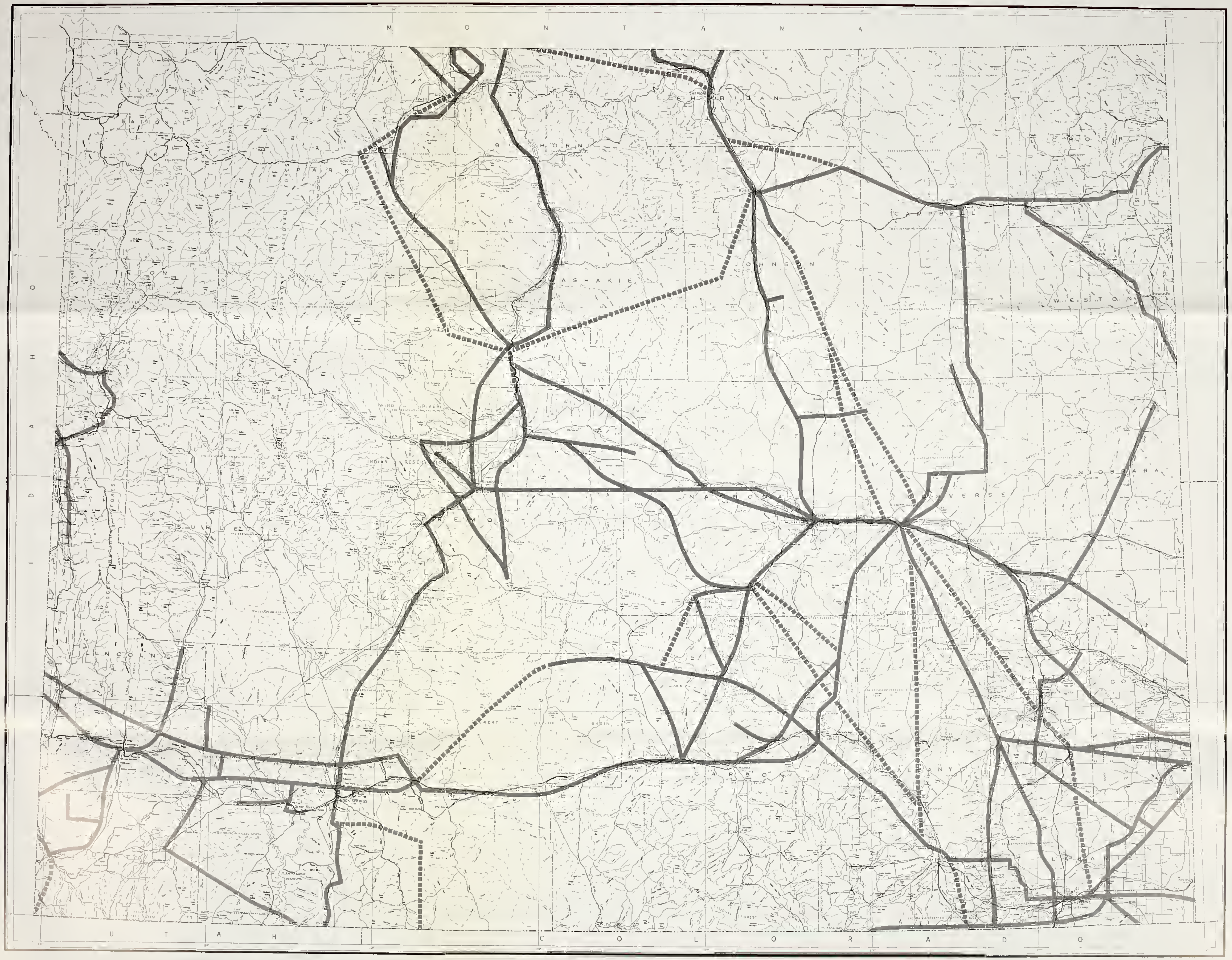
Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group By Michael Clayton & Associates



Western Regional Corridor Study 1986

Transmission Corridors Identified by the Utility Industry

WYOMING

Legend

Occupied Corridors

Un-occupied Corridors

North

10 0 10 20 30 40 Miles

Prepared for the Western Utility Group
By
Michael Clayton & Associates

Western Re
Corridor St
1986